Johannesburg Water (SOC) Ltd

CONTRACT JW14060RR

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

VOLUME 4

TENDER DRAWINGS

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CONTRACT : JW14060RR
NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES

NO.	DESCRIPTION	REV	SHEET	DRAWING NO.
A	GENERAL (GEN) DRAWINGS			
A.1	DRAWING LIST	T01	1 of 1	JW14060R-GEN-001
A.2	LOCALITY PLAN	T01	1 of 1	JW14060R-GEN-002
A.3	SITE LAYOUT	T01	1 of 1	JW14060R-GEN-003
A.4	TYPICAL NAME BOARD	T01	1 of 1	JW14060R-GEN-004
B	CIVIL AND STRUCTURAL (CE) DRAWINGS			
B.1	MCC BUILDING FOR BELT PRESS SET "A" – FOUNDATION, SURFACE BED LAYOUT AND DETAILS	T01	1 of 2	JW14060R-CE-001
B.2	MCC BUILDING FOR BELT PRESS SET "A" – SECTIONS AND DETAILS	T01	2 of 2	JW14060R-CE-002
B.3	MCC BUILDING FOR BELT PRESS SET "C" – FOUNDATION, SURFACE BED LAYOUT AND DETAILS	T01	1 of 2	JW14060R-CE-003
B.4	MCC BUILDING FOR BELT PRESS SET "C" – SECTIONS AND DETAILS	T01	2 of 2	JW14060R-CE-004
B.5	PUMP, SLUDGE VALVE BANK AND POLYMER TANK CONCRETE BUND WALLS AND PLINTHS DETAILS – SECTIONS AND DETAILS	T01	1 of 2	JW14060R-CE-005
B.6	PUMP, SLUDGE VALVE BANK AND POLYMER TANK CONCRETE BUND WALLS AND PLINTHS DETAILS – SECTIONS AND DETAILS	T01	2 of 2	JW14060R-CE-006
B.7	POLYMER SILO CONCRETE BUND WALL – SECTIONS AND DETAILS	T01	1 of 1	JW14060R-CE-007
B.8	CRAWL BEAM – BP1C–BP4C SECTIONS AND DETAILS	T01	1 of 2	JW14060R-CE-008
B.9	CRAWL BEAM – BP1A–BP6A SECTIONS AND DETAILS	T01	2 of 2	JW14060R-CE-009
C	ELECTRICAL AND MECHANICAL (ME) DRAWINGS			
C.1	GENERAL ARRANGEMENT – DEWATERING BUILDING NORTH–EAST FLOOR PLAN	T01	1 of 2	JW14060R-ME-001
C.2	GENERAL ARRANGEMENT – DEWATERING BUILDING NORTH–WEST FLOOR PLAN	T01	2 of 2	JW14060R-ME-002
C.3	GENERAL ARRANGEMENT – SLUDGE VALVE BANK FOR BP1A–6A SECTIONS AND DETAILS	T01	1 of 1	JW14060R-ME-003
C.4	GENERAL ARRANGEMENT – SLUDGE VALVE BANK FOR BP1C–4C SECTIONS AND DETAILS	T01	1 of 1	JW14060R-ME-004
C.5	GENERAL ARRANGEMENT – NEW POLYMER HOLDING TANK FOR BP1C–4C SECTIONS AND DETAILS	T01	1 of 1	JW14060R-ME-005
C.6	GENERAL ARRANGEMENT – BELT PRESS FOR BP1A–6A SECTIONS AND DETAILS	T01	1 of 1	JW14060R-ME-006
C.7	GENERAL ARRANGEMENT – BELT PRESS FOR BP1C–4C SECTIONS AND DETAILS	T01	1 of 1	JW14060R-ME-007
C.8	GENERAL ARRANGEMENT – WASH WATER STRAINER FOR BP1A–6A SECTIONS AND DETAILS	T01	1 of 1	JW14060R-ME-008
C.9	GENERAL ARRANGEMENT – WASH WATER SUPPLY PUMPS AND STRAINER FOR BP1C–4C SECTIONS AND DETAILS	T01	1 of 1	JW14060R-ME-009
C.10	GENERAL ARRANGEMENT – SLUDGE SUPPLY PUMPS SECTIONS AND DETAILS	T01	1 of 1	JW14060R-ME-010
C.11	NEW LOW VOLTAGE SWITCHBOARD – SINGLE LINE DIAGRAM	T01	1 of 1	JW14060R-ME-011
C.12	NEW BELT PRESSES MCC "C" – SINGLE LINE DIAGRAM – SHEET 1	T01	1 of 2	JW14060R-ME-012
C.13	NEW BELT PRESSES MCC "A" – SINGLE LINE DIAGRAM – SHEET 1	T01	1 of 2	JW14060R-ME-013
C.14	NEW BELT PRESSES CABLES RACKING LAYOUT – AREA 1	T01	1 of 1	JW14060R-ME-014
C.15	NEW BELT PRESSES CABLES RACKING LAYOUT – AREA 2	T01	1 of 1	JW14060R-ME-015
C.16	BUILDING LIGHTING AND SMALL POWER LAYOUT – AREA 1	T01	1 of 1	JW14060R-ME-016
C.17	BUILDING LIGHTING AND SMALL POWER LAYOUT – AREA 2	T01	1 of 1	JW14060R-ME-017
C.18	TYPICAL D.O.L SCHEMATIC DIAGRAM	T01	1 of 1	JW14060R-ME-018
C.19	TYPICAL D.O.L FORWARD / REVERSE SCHEMATIC DIAGRAM	T01	1 of 1	JW14060R-ME-019
C.20	TYPICAL VSD SCHEMATIC DIAGRAM	T01	1 of 1	JW14060R-ME-020
C.21	TYPICAL VSD BELT DRIVES SCHEMATIC DIAGRAM	T01	1 of 1	JW14060R-ME-021
C.22	TYPICAL CONVEYOR BELT SCHEMATIC DIAGRAM	T01	1 of 1	JW14060R-ME-022
C.23	TYPICAL SOFT STARTER SCHEMATIC DIAGRAM	T01	1 of 1	JW14060R-ME-023
C.24	TYPICAL PLC DB – SINGLE LINE DIAGRAM	T01	1 of 1	JW14060R-ME-024
C.25	TYPICAL LIGHTING DB – SINGLE LINE DIAGRAM	T01	1 of 1	JW14060R-ME-025
C.26	TYPICAL SMALL POWER DB – SINGLE LINE DIAGRAM	T01	1 of 1	JW14060R-ME-026
C.27	NEW BELT PRESSES MCC "C" – SINGLE LINE DIAGRAM – SHEET 2	T01	2 of 2	JW14060R-ME-027
C.28	NEW BELT PRESSES MCC "A" – SINGLE LINE DIAGRAM – SHEET 2	T01	2 of 2	JW14060R-ME-028
C.29	NEW BELT PRESSES EARTHING AND LIGHTING PROTECTION – SCHEMATIC DIAGRAM FOR NORTH–EAST "AREA 1" SECTION	T01	1 of 1	JW14060R-ME-029
C.30	NEW BELT PRESSES EARTHING AND LIGHTING PROTECTION – SCHEMATIC DIAGRAM FOR NORTH–WEST "AREA 2" SECTION	T01	2 of 2	JW14060R-ME-030
C.31	NEW BELT PRESSES EARTHING AND LIGHTING PROTECTION – SCHEMATIC DIAGRAM	T01	1 of 1	JW14060R-ME-031
C.32	GENERAL ARRANGEMENT OF THE UNIT 3 CHLORINE CONTACT CHAMBER WASH WATER TRANSFER PUMPS	T01	1 of 1	JW14060R-ME-032

NO.	DESCRIPTION	REV	SHEET	DRAWING NO.
A	GENERAL (GEN) DRAWINGS			
D	CONTROL AND INSTRUMENTATION (CI) DRAWINGS			
D.1	LEGEND SHEET – ASSET TAGGING PIPING & INSTRUMENTATION DIAGRAM	T01	1 of 3	JW14060R-CI-001
D.2	LEGEND SHEET – ASSET TAGGING PIPING & INSTRUMENTATION DIAGRAM	T01	2 of 3	JW14060R-CI-002
D.3	LEGEND SHEET – ASSET TAGGING PIPING & INSTRUMENTATION DIAGRAM	T01	3 of 3	JW14060R-CI-003
D.4	DEWATERING PLANT PROCESS FLOW DIAGRAM – SHEET 1	T01	1 of 2	JW14060R-CI-004
D.5	DEWATERING PLANT PROCESS FLOW DIAGRAM – SHEET 2	T01	2 of 2	JW14060R-CI-005
D.6	PIPING AND INSTRUMENTATION DIAGRAM – BELT PRESS PLANT BP1A–4A	T01	1 of 2	JW14060R-CI-006
D.7	PIPING AND INSTRUMENTATION DIAGRAM – BELT PRESS PLANT BP5A–6A	T01	2 of 2	JW14060R-CI-007
D.8	PIPING AND INSTRUMENTATION DIAGRAM – BELT PRESS PLANT BP1A–4A	T01	1 of 1	JW14060R-CI-008
D.9	PIPING AND INSTRUMENTATION DIAGRAM – POLY DOSING MAKE–UP AND HOLDING TANKS	T01	1 of 1	JW14060R-CI-009
D.10	PIPING AND INSTRUMENTATION DIAGRAM – POLY DOSING SUPPLY TO BP1A–6A	T01	1 of 1	JW14060R-CI-010
D.11	PIPING AND INSTRUMENTATION DIAGRAM – POLY DOSING SUPPLY TO BP1A–4A	T01	1 of 1	JW14060R-CI-011
D.12	PIPING AND INSTRUMENTATION DIAGRAM – MAIN WASH WATER SUPPLY TO DEWATERING BUILDING	T01	1 of 1	JW14060R-CI-012
D.13	PIPING AND INSTRUMENTATION DIAGRAM – MAIN SLUDGE SUPPLY TO DEWATERING BUILDING	T01	1 of 1	JW14060R-CI-013
E	STANDARD (STD) DRAWINGS			
E.1	DEWATERING AND MCC ACCESS DOOR SCHEDULE AND DETAILS	T01	1 of 1	JW14060R-STD-001
E.2	TYPICAL EQUIPMENT ACCESS STEEL STAIRS, HANDRAILS DETAILS AND GRATING DETAILS	T01	1 of 1	JW14060R-STD-002
E.3	TYPICAL FENCING AND ACCESS GATE DETAILS	T01	1 of 1	JW14060R-STD-003

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	M.MAHLANGU
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED Pr. Eng. No.	JF. PRINSLOO 960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
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CITY OF JOHANNESBURG

NORTHEN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
DRAWING LIST

DESIGN MANAGER
J. PRINSLOO

DATE 20/02/2020

SCALE
AS SHOWN

	AMENDMENTS	APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.
JW NUMBER
JW14060R-GEN-001
CONSULTANT'S NUMBER
H357555-GEN-001
FILE No
BWW1403

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02-FEB-2022
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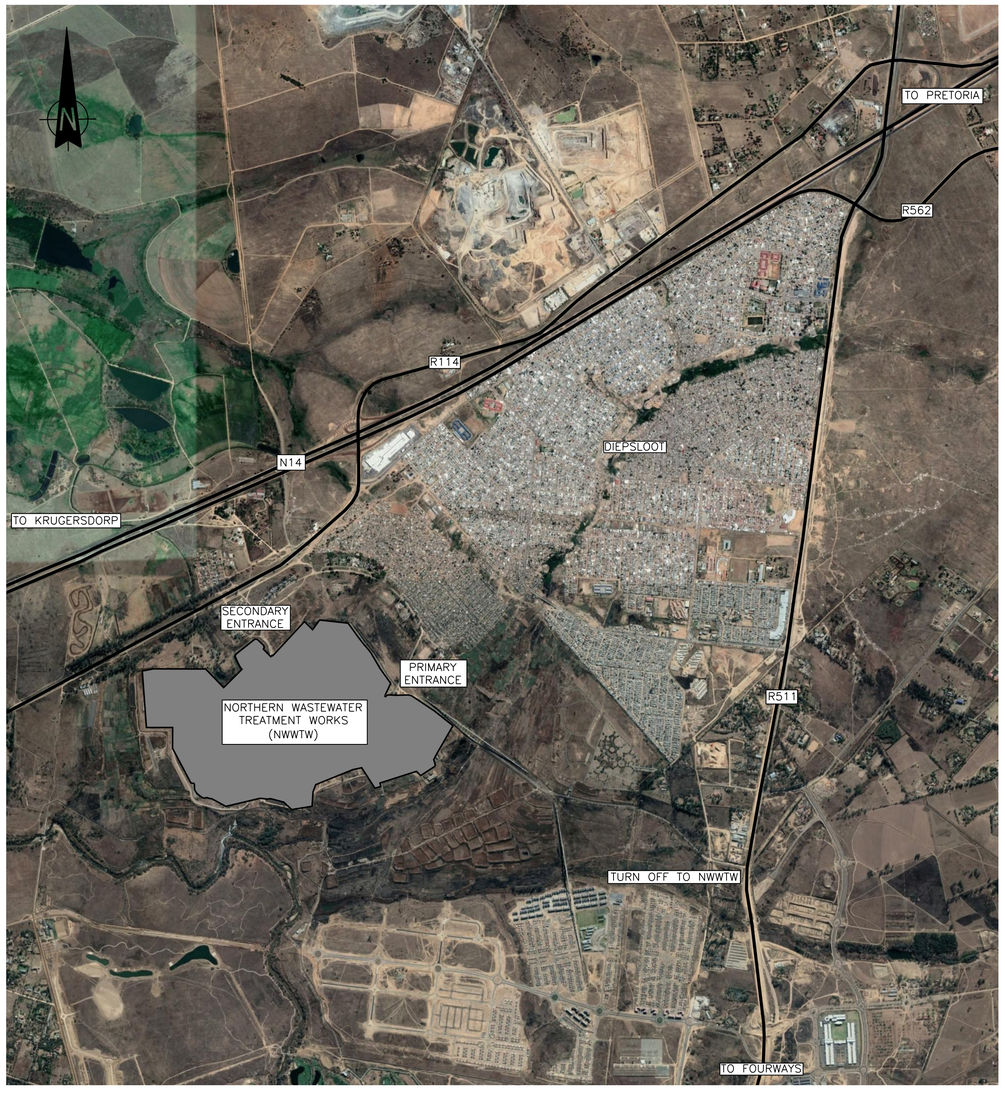

NORTHERN WASTEWATER TREATMENT WORKS LOCALITY
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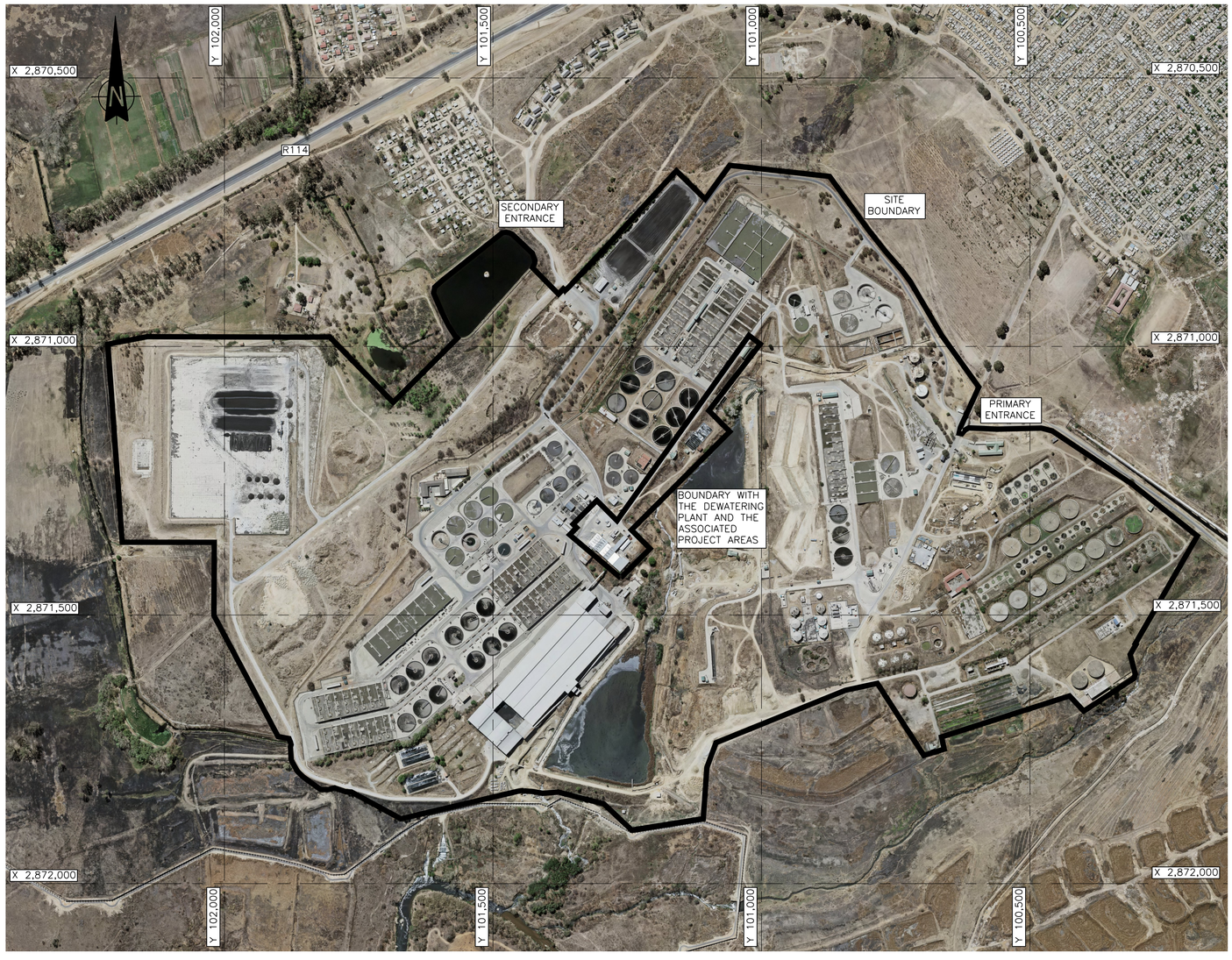

NORTHERN WASTEWATER TREATMENT WORKS SITE
SCALE 1:5000

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	S. WESSON
DRAWN	M. MAHLANGU
CHECKED	S. MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
LOCALITY PLAN

DESIGN MANAGER
J. PRINSLOO

DATE 20/02/2020

SCALE
AS SHOWN

AMENDMENTS

		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-GEN-002
CONSULTANT'S NUMBER
H357555-GEN-002
FILE No
BWW1403

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PROJECT SITE AREAS	
AREA No.	**DESCRIPTION**
A1	SLUDGE COLLECTION CHAMBER & PUMPS
A2	UNIT 3 CONTACT CHAMBER
A3	LIQUOR PUMP
A4	DEWATERING BUILDING SUBSTATION
A5	D.A.F
A6	POLYMER SILO
A7	DEWATERING BUILDING
A8	UNIT 3 SUB-1
A9	UNIT 3 CLARIFIERS
A10	UNIT 3 WST'S
A11	UNIT 4 WST'S
A12	UNIT 5 WST

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

NORTHERN WASTEWATER TREATMENT WORKS – DEWATERING BUILDING PROJECT SITE
SCALE 1:1000

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	S. WESSON
DRAWN	M. MAHLANGU
CHECKED	S. MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT PLANT
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
SITE LAYOUT

DESIGN MANAGER J. PRINSLOO

DATE 20/02/2020

SCALE AS SHOWN

AMENDMENTS			
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-GEN-003

CONSULTANT'S NUMBER
H357555-GEN-003

FILE No
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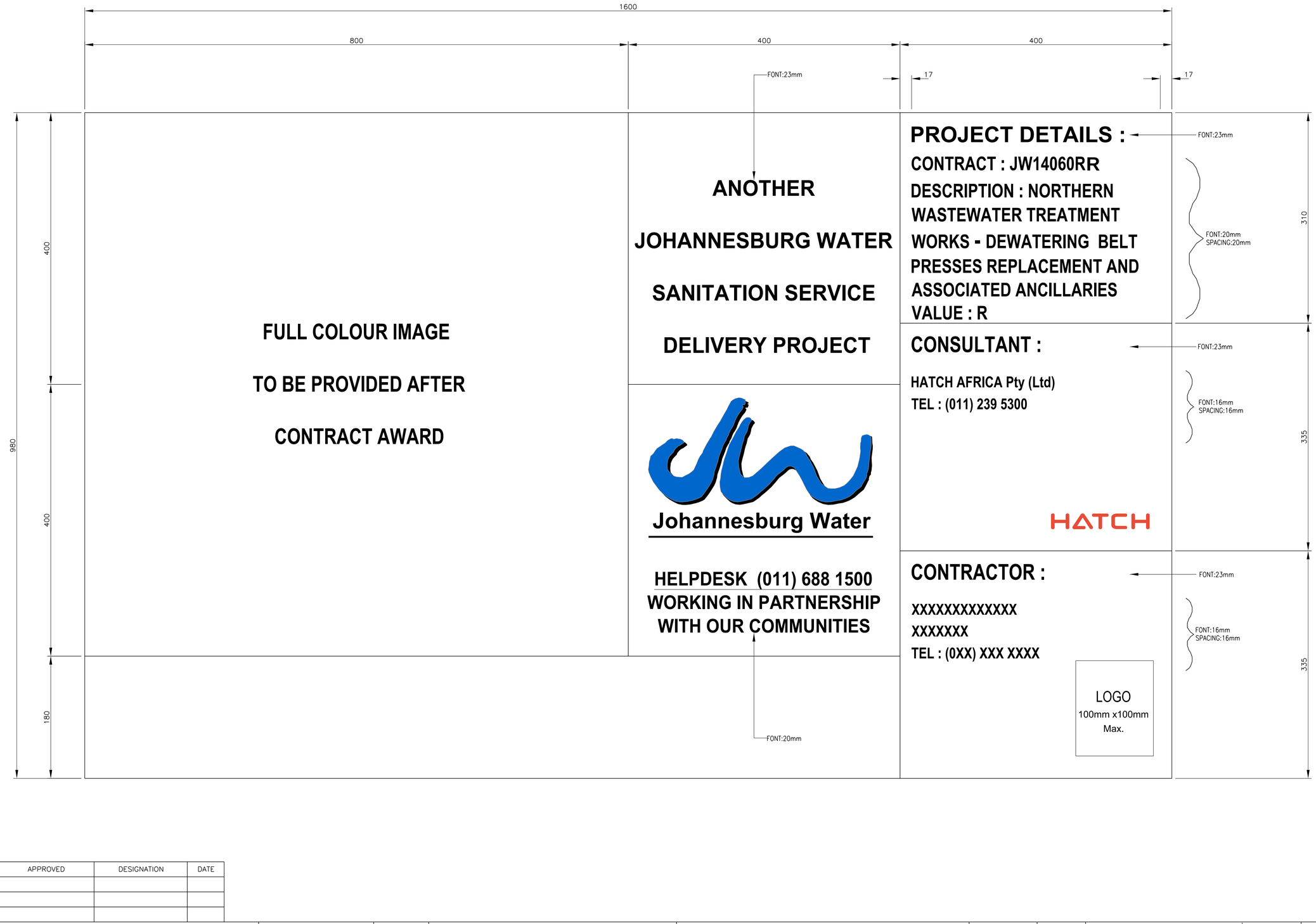

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	S.WESSON
DRAWN	M.MAHLANGU
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES

TYPICAL NAME BOARD

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-GEN-004

CONSULTANT'S NUMBER
H357555-GEN-004

FILE No
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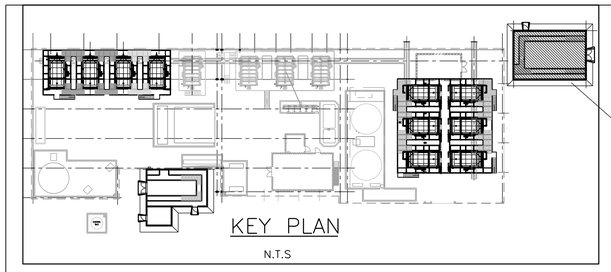
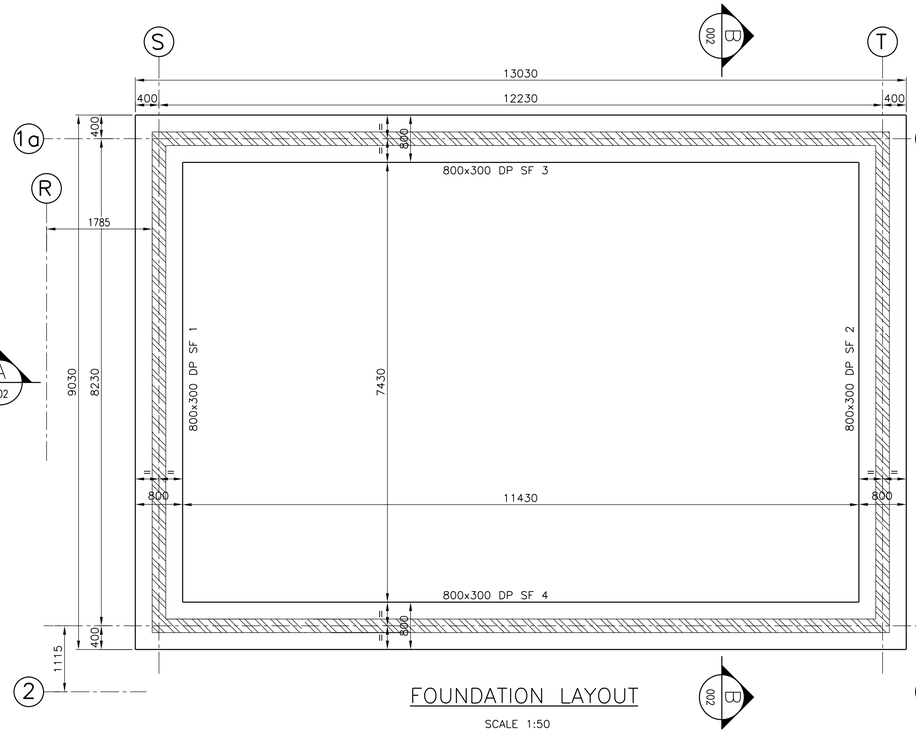
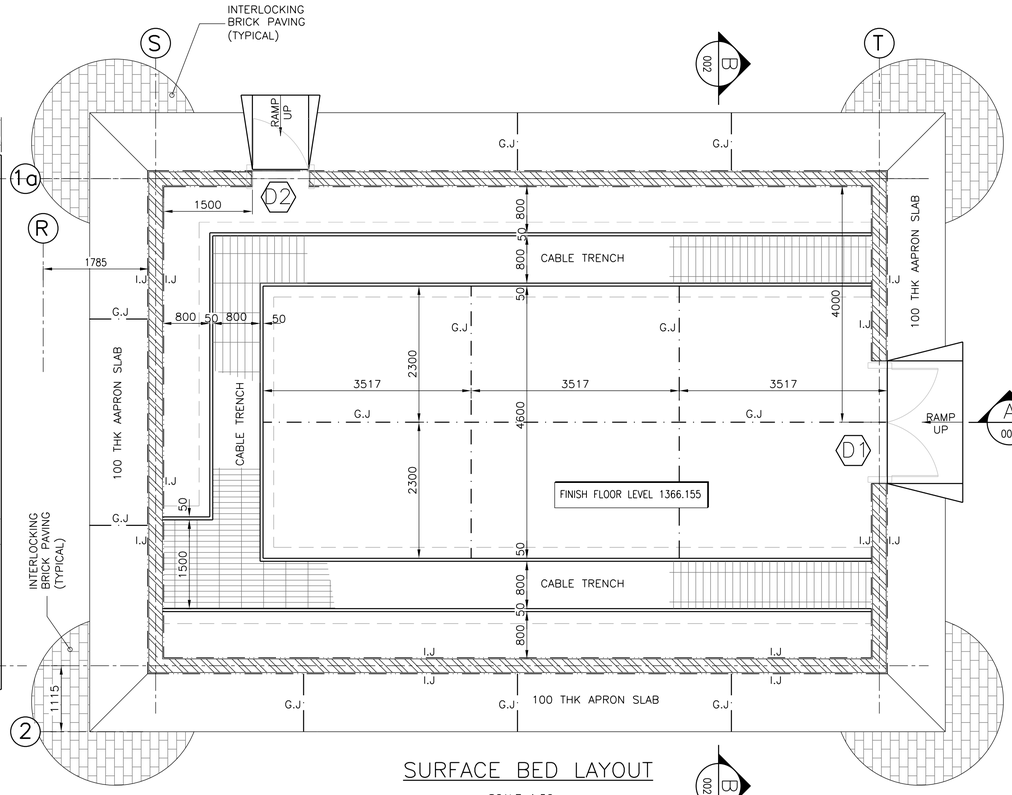




FOUNDATION LAYOUT

SCALE 1:50



SURFACE BED LAYOUT

SCALE 1:50

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE EMPLOYER'S AGENT OR REPRESENTATIVE FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
8. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFI-CATION,OR RELEVANT SABS 1200 SPECIFICATION.
9. STRUCTURAL DRAWINGS TO BE READ IN CONJUNCTION WITH SERVICES DRAWINGS AND ANY DISCREPANCIES MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEERING SERVICES MANAGER.
10. ALL DIMENSIONS ARE IN MM.
11. CONFIRM THE SETTING-OUT WITH EMPLOYERS AGENT/REPRESENTATIVE WITH REFERENCES TO JW14060R-ME-002.

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT.
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT AND EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY A EMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK-WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa.WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF APPLICABLE STANDARDS PROJECT SPECIFICATION.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

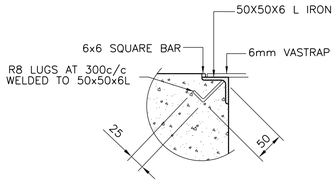
TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

BRICKWORK NOTES

1. INTERIOR WALLS TO BE CLAY STOCK BRICKS.
2. EXTERIOR WALLS TO BE (MAKORO DARK) FACE BRICKS.
3. ALL BRICKS USED TO COMPLY WITH SABS 227 AND SABS 0164
4. MIN. REQUIRED CRUSHING STRENGTH
   14MPa HARD BURNT COMMONS
   28MPa FACE BRICKS.
5. CONTRACTOR TO SUPPLY BRICKS TO SABS FOR TESTING OF STRENGTH AND SOUNDNESS AND PROVIDE TEST RESULTS.
6. MORTAR TO BE CLASS II TO SABS 0164.
7. SAND USED FOR MORTAR TO COMPLY WITH REQUIREMENTS OF SABS 1090.
8. ALL PIERS , INTERSECTIONS AND RETAINING WALLS TO BE PROPERLY BONDED WITH MAIN WALLS AT EVERY SECOND COURSE.
9. NO VIBRATING ROLLER SHALL BE USED TO COMPACT SOIL NEAR NEWLY CONSTRUCTED WALLS.
10. ALL WALLS TO BE BUILT IN THE CONVENTIONAL STRETCHER COURSE SYSTEM.
11. BRICK REINFORCEMENT :
    a. BRICKFORCE GENERALLY EVERY 5th COURSE EXCEPT OVER WINDOWS AND DOORS WHERE BRICKFORCE SHALL BE LAID EVERY COURSE FOR FOUR COURSES.
    b. PROVIDE BRICKFORCE AT EVERY COURSE FROM TOP OF STRIP FOOTING TO 510mm ABOVE F.F.L. TO ALL BRICKWALLS.
12. ALL INTERNAL WALLS TO BE CONNECTED TO EXTERNAL WALLS WITH 1,6x30x900 LONG GALVANISED MILD STEEL L-STRAPS EVERY FOURTH COURSE FOR FULL HEIGHT INCLUDING CONNECTING TO RING BEAM WHERE APPLICABLE.
13. THE THICKNESS OF THE BED JOINT SHALL IN NO CASE EXCEED 13mm.
14. THE HEIGHT OF WALLING BUILT IN ONE DAY SHALL NOT EXCEED 1500mm.
15. ALL BRICKWALLS SHOWN ON THIS DRAWING ARE 230mm THICK U.O.N.

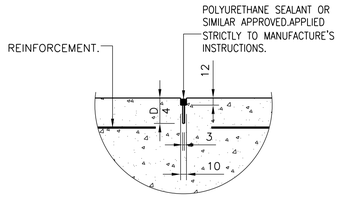
LEGEND

- G.J = GROOVED JOINT
- I.J = ISOLATION JOINT
- EDGE OF CONCRETE
- T.O.C = TOP OF CONCRETE
- U.S.C = UNDERSIDE OF CONCRETE
- SF = STRIP FOOTING
- F.R.L = FINISH ROAD LEVEL



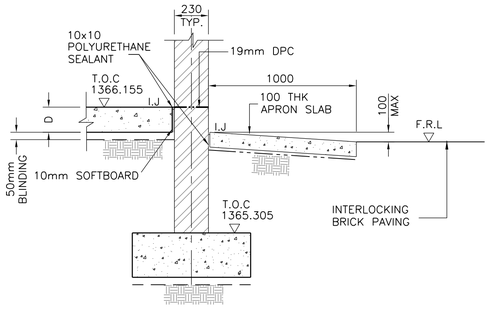
DETAIL 1

SCALE 1:5



GROOVED JOINT (G.J)

SCALE 1:5



TYPICAL APRON SLAB DETAIL

SCALE 1:20

REFERENCE DRAWINGS

JW14060R-STD-001 : DEWATERING AND MCC ACCESS DOORS SCHEDULE AND DETAILS

JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R-CE-002 : DEWATERING BLD MCC BUILDING FOR BELT PRESS SET "A" - SECTION AND DETAILS (SHEET 2 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	S.WESSON
DRAWN	G.NGOMA
CHECKED	M.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
MCC BUILDING FOR BELT PRESS SET "A" - FOUNDATION,-SURFACE BED LAYOUT & DETAILS (SHEET 1 OF 2)

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

	AMENDMENTS	APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-CE-001

CONSULTANT'S NUMBER
H357555-CE-001

FILE No
BWW1403

j30c_pwsservice
02-FEB-2022 14:45
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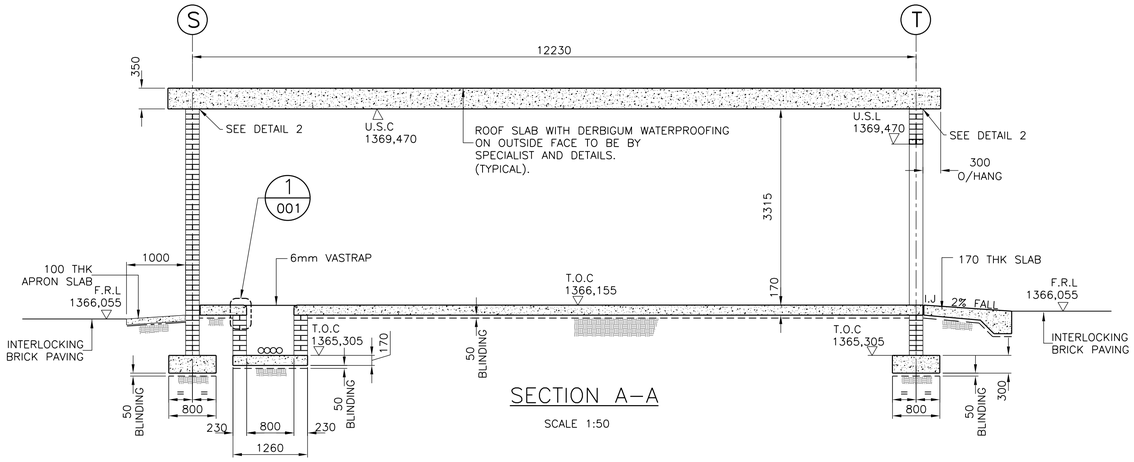
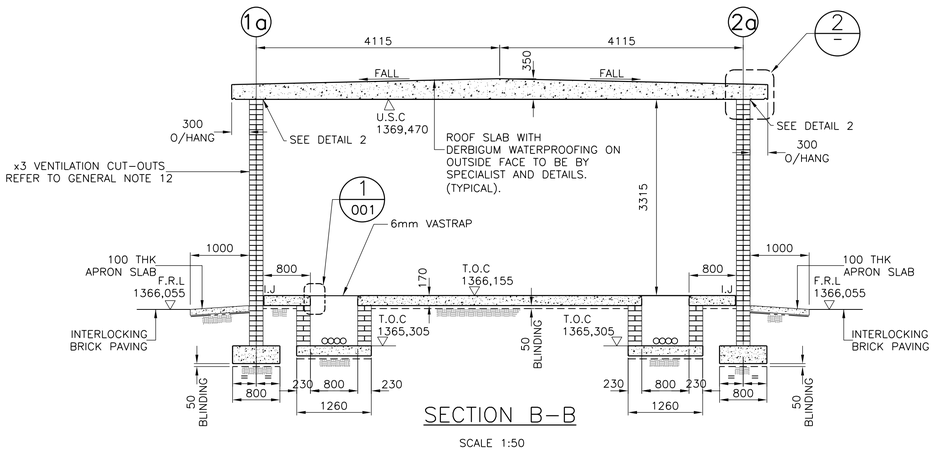


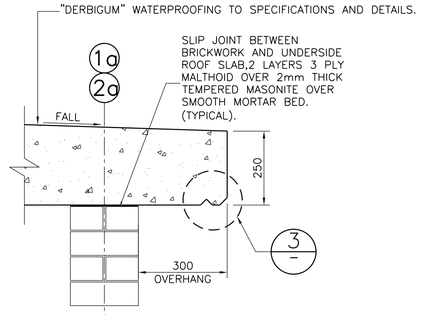
SECTION A–A

SCALE 1:50



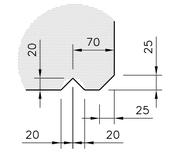
SECTION B–B

SCALE 1:50



DETAIL 2

SCALE 1:10



DETAIL 3

SCALE 1:5

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
8. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFI–CATION,OR RELEVANT SABS 1200 SPECIFICATION.
9. STRUCTURAL DRAWINGS TO BE READ IN CONJUNCTION WITH SERVICES DRAWINGS AND ANY DISCREPANCIES MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE EMPLOYER'S AGENT OR REPRESENTATIVE
10. ALL DIMENSIONS ARE IN MM.
11. CONFIRM THE SETTING–OUT WITH EMPLOYERS AGENT/REPRESENTATIVE WITH REFERENCES TO JW14060R–ME–002.
12. THE VENTILATION CUT–OUTS TO BE IDENTIFIED DURING CONSTRUCTION UNDER THE INSTRUCTION OF THE EMPLOYER'S AGENT OR REPRESENTATIVE

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT,
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT AND EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY A EMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK–WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa.WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF APPLICABLE STANDARDS PROJECT SPECIFICATION.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

BRICKWORK NOTES

1. INTERIOR WALLS TO BE CLAY STOCK BRICKS.
2. EXTERIOR WALLS TO BE (MAKORO DARK) FACE BRICKS.
3. ALL BRICKS USED TO COMPLY WITH SABS 227 AND SABS 0164
4. MIN. REQUIRED CRUSHING STRENGTH
   14MPa HARD BURNT COMMONS
   28MPa FACE BRICKS.
5. CONTRACTOR TO SUPPLY BRICKS TO SABS FOR TESTING OF STRENGTH AND SOUNDNESS AND PROVIDE TEST RESULTS.
6. MORTAR TO BE CLASS II TO SABS 0164.
7. SAND USED FOR MORTAR TO COMPLY WITH REQUIREMENTS OF SABS 1090.
8. ALL PIERS , INTERSECTIONS AND RETAINING WALLS TO BE PROPERLY BONDED WITH MAIN WALLS AT EVERY SECOND COURSE.
9. NO VIBRATING ROLLER SHALL BE USED TO COMPACT SOIL NEAR NEWLY CONSTRUCTED WALLS.
10. ALL WALLS TO BE BUILT IN THE CONVENTIONAL STRETCHER COURSE SYSTEM.
11. BRICK REINFORCEMENT :
    a. BRICKFORCE GENERALLY EVERY 5th COURSE EXCEPT OVER WINDOWS AND DOORS WHERE BRICKFORCE SHALL BE LAID EVERY COURSE FOR FOUR COURSES.
    b. PROVIDE BRICKFORCE AT EVERY COURSE FROM TOP OF STRIP FOOTING TO 510mm ABOVE F.F.L. TO ALL BRICKWALLS.
12. ALL INTERNAL WALLS TO BE CONNECTED TO EXTERNAL WALLS WITH 1,6x30x900 LONG GALVANISED MILD STEEL L–STRAPS EVERY FOURTH COURSE FOR FULL HEIGHT INCLUDING CONNECTING TO RING BEAM WHERE APPLICABLE.
13. THE THICKNESS OF THE BED JOINT SHALL IN NO CASE EXCEED 13mm.
14. THE HEIGHT OF WALLING BUILT IN ONE DAY SHALL NOT EXCEED 1500mm.
15. ALL BRICKWALLS SHOWN ON THIS DRAWING ARE 230mm THICK U.O.N.

REFERENCE DRAWINGS

JW14060R–STD–001 : DEWATERING AND MCC ACCESS DOORS SCHEDULE AND DETAILS
JW14060R–ME–001 : DEWATERING BLD NORTH–WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R–ME–002 : DEWATERING BLD NORTH–EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R–CE–001 : MCC BUILDING FOR BELT PRESS SET "A" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	S.WESSON
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
MCC BUILDING FOR BELT PRESS SET "A"
SECTIONS AND DETAILS (SHEET 2 OF 2)

DESIGN MANAGER
J. PRINSLOO
DATE 20/02/2020

SCALE
AS SHOWN

AMENDMENTS

		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R–CE–002
CONSULTANT'S NUMBER
H357555–CE–002
FILE No
BWW1403

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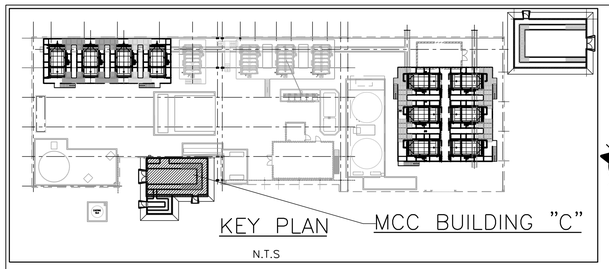
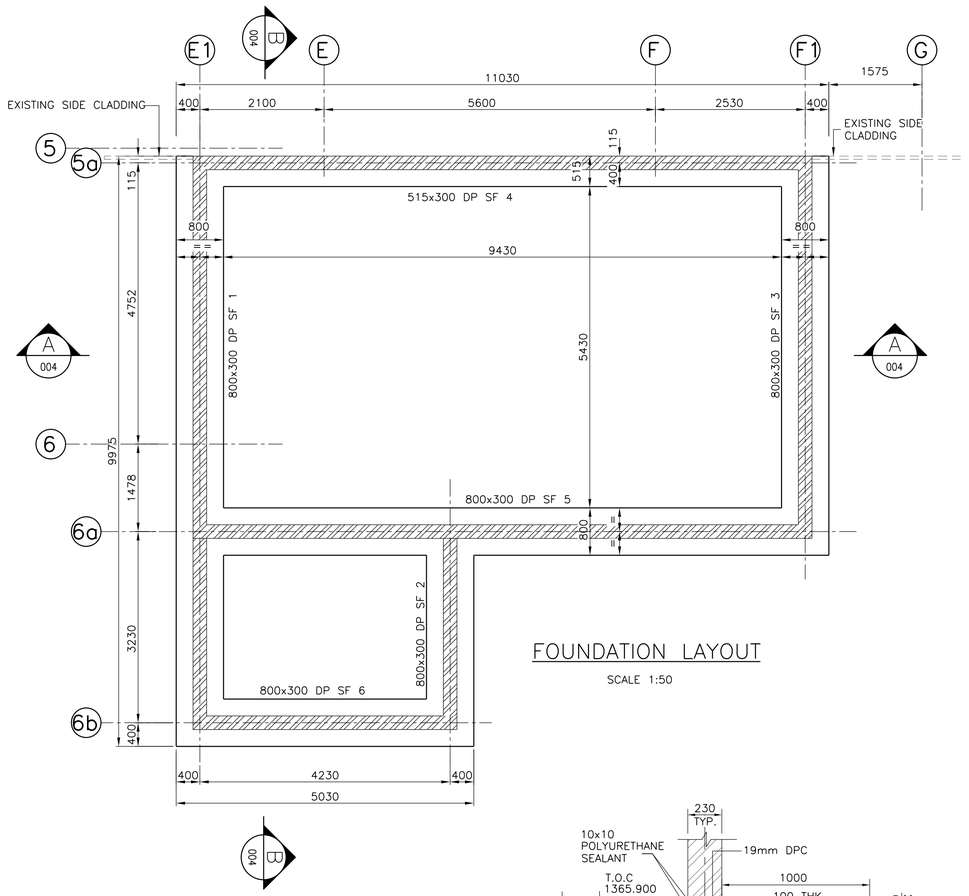


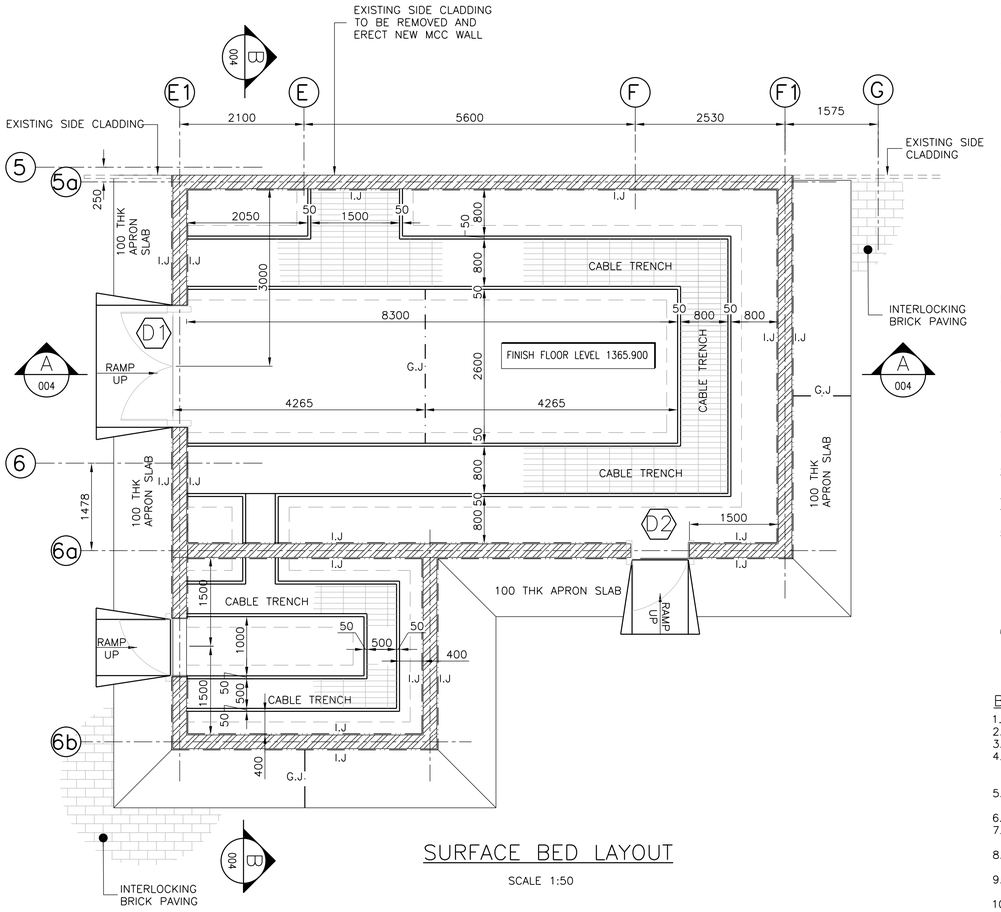
LEGEND

- G.J = GROOVED JOINT
- I.J = ISOLATION JOINT
- EDGE OF CONCRETE
- T.O.C = TOP OF CONCRETE
- U.S.C = UNDERSIDE OF CONCRETE
- SF = STRIP FOOTING
- F.R.L = FINISH ROAD LEVEL



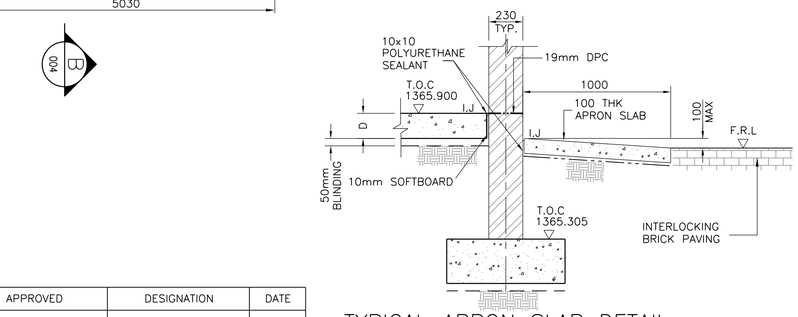
FOUNDATION LAYOUT

SCALE 1:50



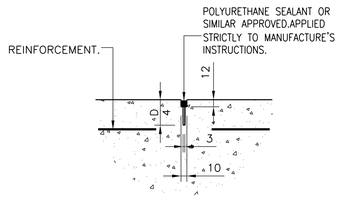
SURFACE BED LAYOUT

SCALE 1:50



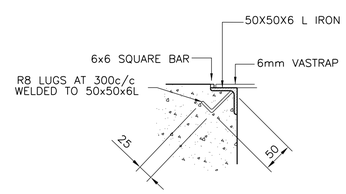
TYPICAL APRON SLAB DETAIL

SCALE 1:20



GROOVED JOINT (G.J)

SCALE 1:5



DETAIL 1

SCALE 1:5

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FOUNDATION:

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FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
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6. UNFORMED SURFACE FINISHES:

TOP OF FLOOR SLABS	POWERFLOAT.
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TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

BRICKWORK NOTES

1. INTERIOR WALLS TO BE CLAY STOCK BRICKS.
2. EXTERIOR WALLS TO BE (MAKORO DARK) FACE BRICKS.
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4. MIN. REQUIRED CRUSHING STRENGTH
   14MPa HARD BURNT COMMONS
   28MPa FACE BRICKS.
5. CONTRACTOR TO SUPPLY BRICKS TO SABS FOR TESTING OF STRENGTH AND SOUNDNESS AND PROVIDE TEST RESULTS.
6. MORTAR TO BE CLASS II TO SABS 0164.
7. SAND USED FOR MORTAR TO COMPLY WITH REQUIREMENTS OF SABS 1090.
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9. NO VIBRATING ROLLER SHALL BE USED TO COMPACT SOIL NEAR NEWLY CONSTRUCTED WALLS.
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11. BRICK REINFORCEMENT :
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14. THE HEIGHT OF WALLING BUILT IN ONE DAY SHALL NOT EXCEED 1500mm.
15. ALL BRICKWALLS SHOWN ON THIS DRAWING ARE 230mm THICK U.O.N.

REFERENCE DRAWINGS

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JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R-CE-004 : MCC BUILDING FOR BELT PRESS SET "C" SECTIONS AND DETAILS. (SHEET 2 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	S.WESSON
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
MCC BUILDING FOR BELT PRESS SET "C"-FOUNDATION, SURFACE BED LAYOUT AND DETAILS (SHEET 1 OF 2)

DESIGN MANAGER: J. PRINSLOO
DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS			
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/022

DRAWING No.

JW NUMBER
JW14060R-CE-003
CONSULTANT'S NUMBER
H357555-CE-003
FILE No
BWW1403

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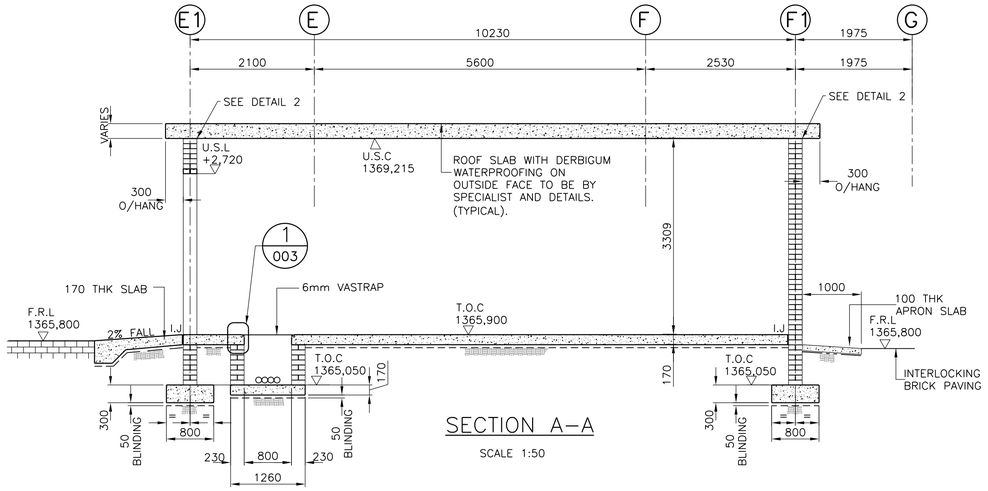
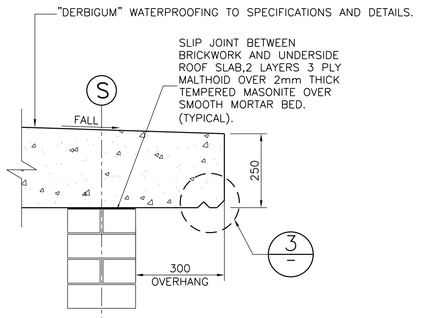


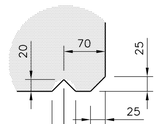
SECTION A–A

SCALE 1:50



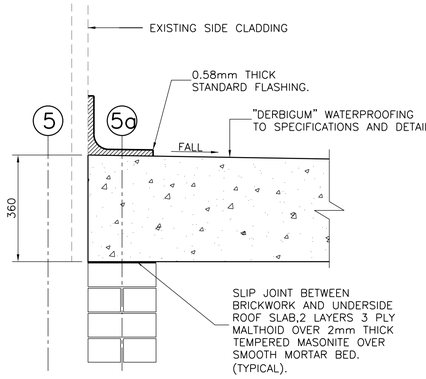
DETAIL 2

SCALE 1:10



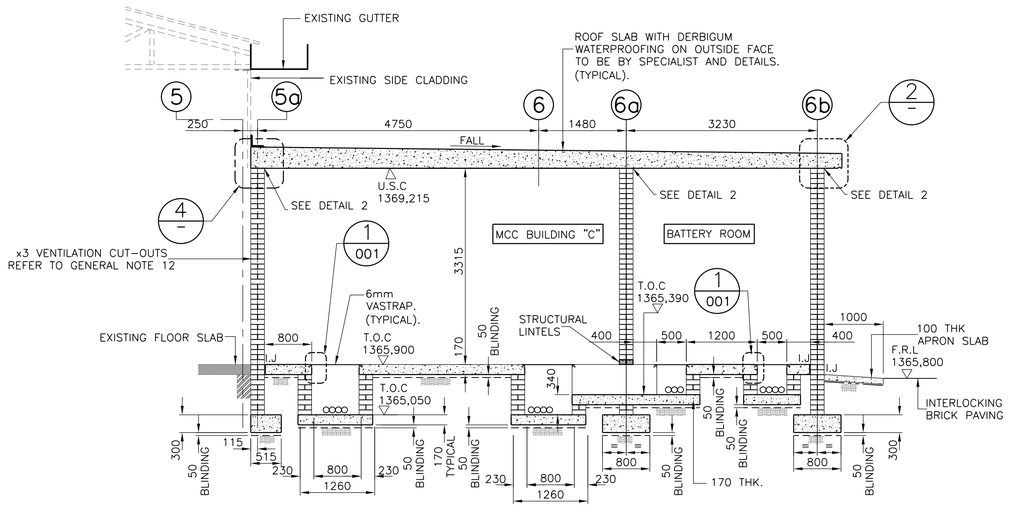
DETAIL 3

SCALE 1:5



DETAIL 4

SCALE 1:10



SECTION B–B

SCALE 1:50

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3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
8. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFI–CATION,OR RELEVANT SABS 1200 SPECIFICATION.
9. STRUCTURAL DRAWINGS TO BE READ IN CONJUNCTION WITH SERVICES DRAWINGS AND ANY DISCREPANCIES MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE EMPLOYER'S AGENT OR REPRESENTATIVE
10. ALL DIMENSIONS ARE IN MM.
11. CONFIRM THE SETTING–OUT WITH EMPLOYERS AGENT/REPRESENTATIVE JW14060R–ME–001
12. THE VENTILATION CUT–OUTS TO BE IDENTIFIED DURING CONSTRUCTION UNDER THE INSTRUCTION OF THE EMPLOYER'S AGENT OR REPRESENTATIVE

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT,
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT AND EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY A EMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK–WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa.WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF APPLICABLE STANDARDS PROJECT SPECIFICATION.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

BRICKWORK NOTES

1. INTERIOR WALLS TO BE CLAY STOCK BRICKS.
2. EXTERIOR WALLS TO BE (MAKORO DARK) FACE BRICKS.
3. ALL BRICKS USED TO COMPLY WITH SABS 227 AND SABS 0164
4. MIN. REQUIRED CRUSHING STRENGTH
   14MPa HARD BURNT COMMONS
   28MPa FACE BRICKS.
5. CONTRACTOR TO SUPPLY BRICKS TO SABS FOR TESTING OF STRENGTH AND SOUNDNESS AND PROVIDE TEST RESULTS.
6. MORTAR TO BE CLASS II TO SABS 0164.
7. SAND USED FOR MORTAR TO COMPLY WITH REQUIREMENTS OF SABS 1090.
8. ALL PIERS , INTERSECTIONS AND RETAINING WALLS TO BE PROPERLY BONDED WITH MAIN WALLS AT EVERY SECOND COURSE.
9. NO VIBRATING ROLLER SHALL BE USED TO COMPACT SOIL NEAR NEWLY CONSTRUCTED WALLS.
10. ALL WALLS TO BE BUILT IN THE CONVENTIONAL STRETCHER COURSE SYSTEM.
11. BRICK REINFORCEMENT :
    a. BRICKFORCE GENERALLY EVERY 5th COURSE EXCEPT OVER WINDOWS AND DOORS WHERE BRICKFORCE SHALL BE LAID EVERY COURSE FOR FOUR COURSES.
    b. PROVIDE BRICKFORCE AT EVERY COURSE FROM TOP OF STRIP FOOTING TO 510mm ABOVE F.F.L. TO ALL BRICKWALLS.
12. ALL INTERNAL WALLS TO BE CONNECTED TO EXTERNAL WALLS WITH 1,6x30x900 LONG GALVANISED MILD STEEL L–STRAPS EVERY FOURTH COURSE FOR FULL HEIGHT INCLUDING CONNECTING TO RING BEAM WHERE APPLICABLE.
13. THE THICKNESS OF THE BED JOINT SHALL IN NO CASE EXCEED 13mm.
14. THE HEIGHT OF WALLING BUILT IN ONE DAY SHALL NOT EXCEED 1500mm.
15. ALL BRICKWALLS SHOWN ON THIS DRAWING ARE 230mm THICK U.O.N.

REFERENCE DRAWINGS

JW14060R–STD–001 : DEWATERING AND MCC ACCESS DOORS SCHEDULE AND DETAILS.
JW14060R–ME–001 : DEWATERING BLD NORTH–WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R–ME–002 : DEWATERING BLD NORTH–EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R–CE–003 : MCC BUILDING FOR BELT PRESS SET "C" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	S.WESSON
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
MCC BUILDING FOR BELT PRESS SET "C" – FOUNDATION, SECTIONS AND DETAILS (SHEET 2 OF 2)

DESIGN MANAGER
J. PRINSLOO
DATE 20/02/2020

SCALE
AS SHOWN

AMENDMENTS

T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R–CE–004
CONSULTANT'S NUMBER
H357555–CE–004
FILE No
BWW1403

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02-FEB-2022
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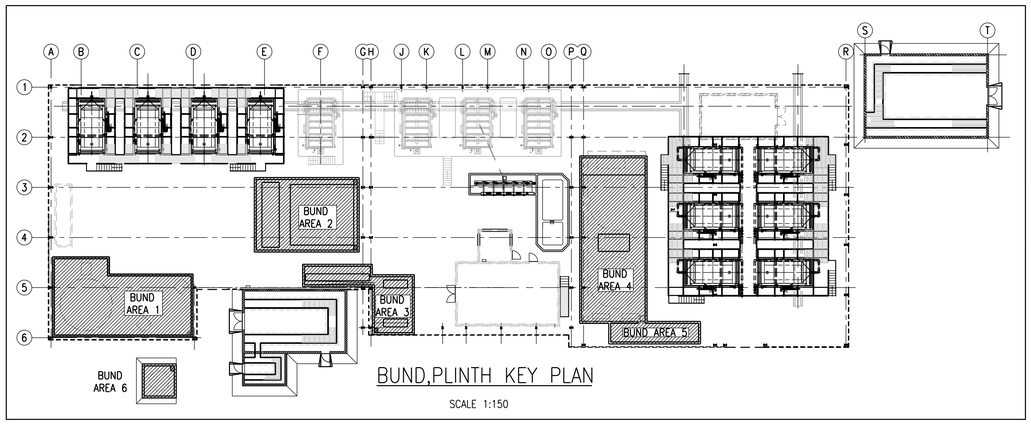
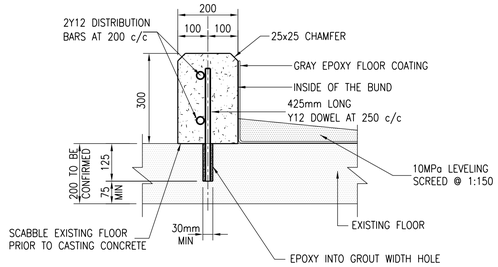


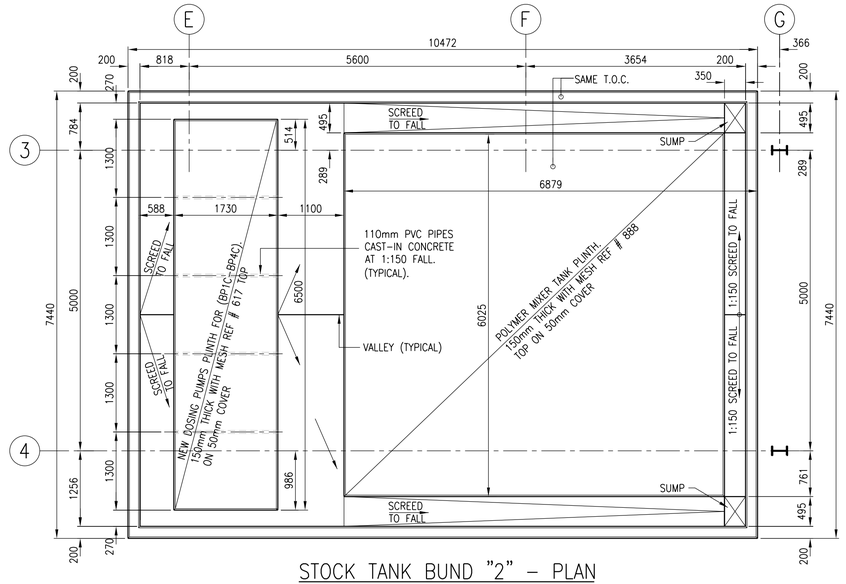
BUND,PLINTH KEY PLAN

SCALE 1:150



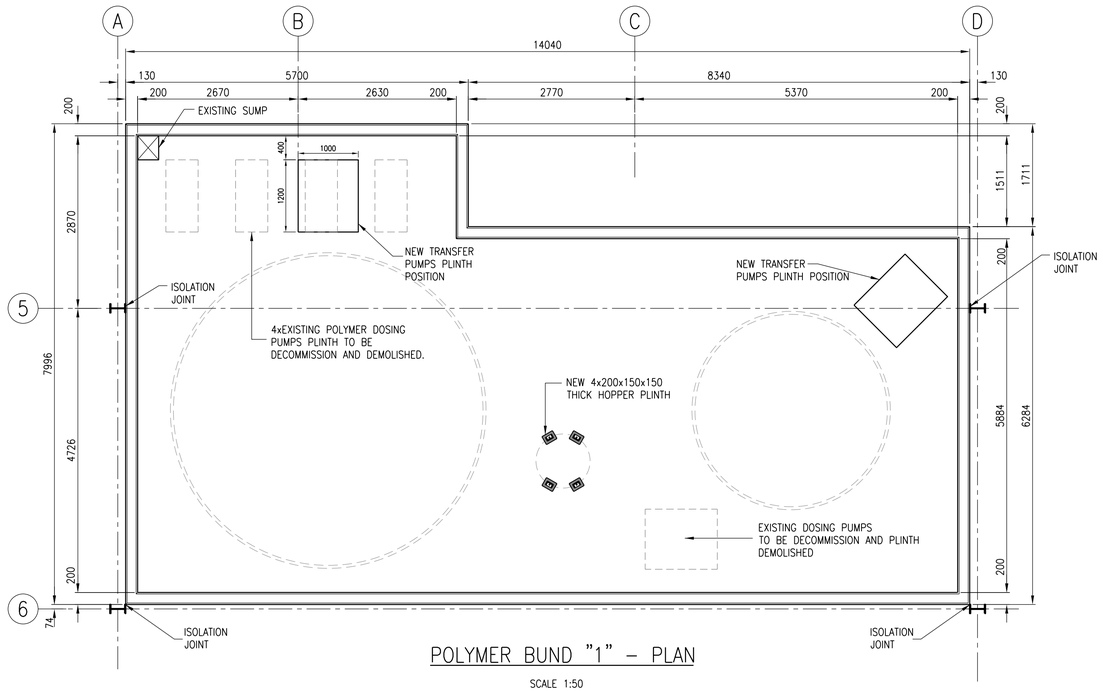
DETAIL 1
TYPICAL BUND WALL

SCALE 1:10



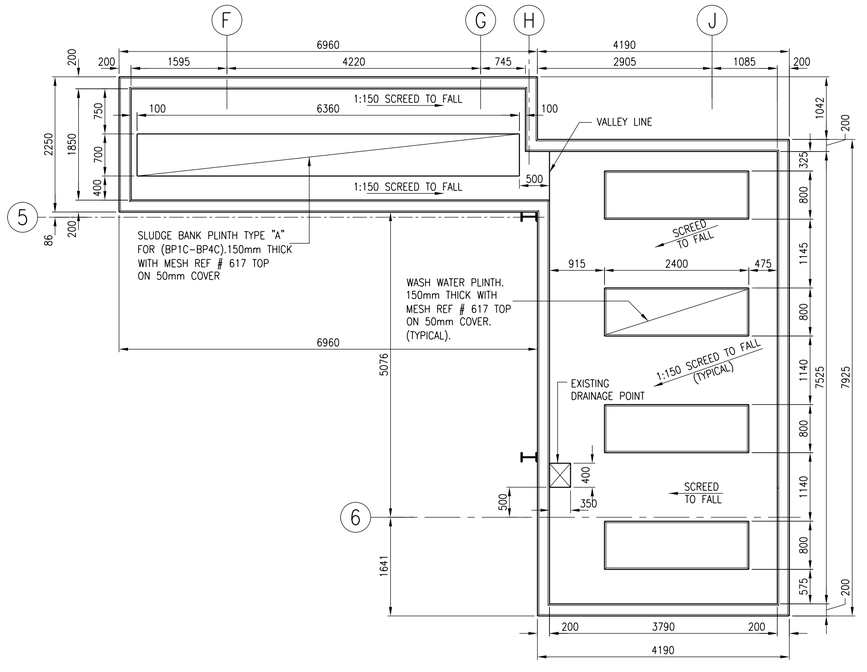
STOCK TANK BUND "2" – PLAN

SCALE 1:50



POLYMER BUND "1" – PLAN

SCALE 1:50



SLUDGE AND WASHWATER PUMP BUND "3" – PLAN

SCALE 1:50

NOTE
REFERENCE DRAWINGS SEE DRAWING JW14060R-CE-006

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

CONCRETE-PUMP,SLUDGE VALVE BANK & POLYMER TANK BUND WALLS,PLINTH-SECT- & DETAILS-(SHT 1 OF 2)

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER: JW14060R-CE-005

CONSULTANT'S NUMBER: H357555-CE-005

FILE No: BWW1403

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02-FEB-2022 14:45
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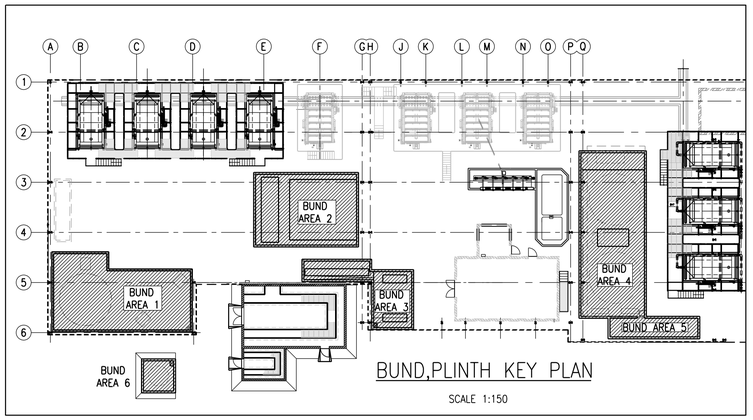
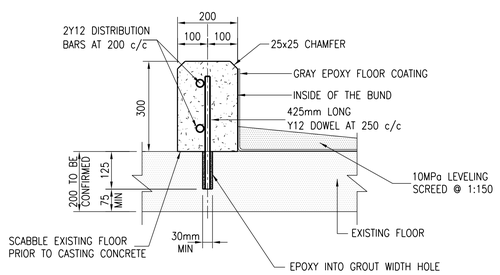


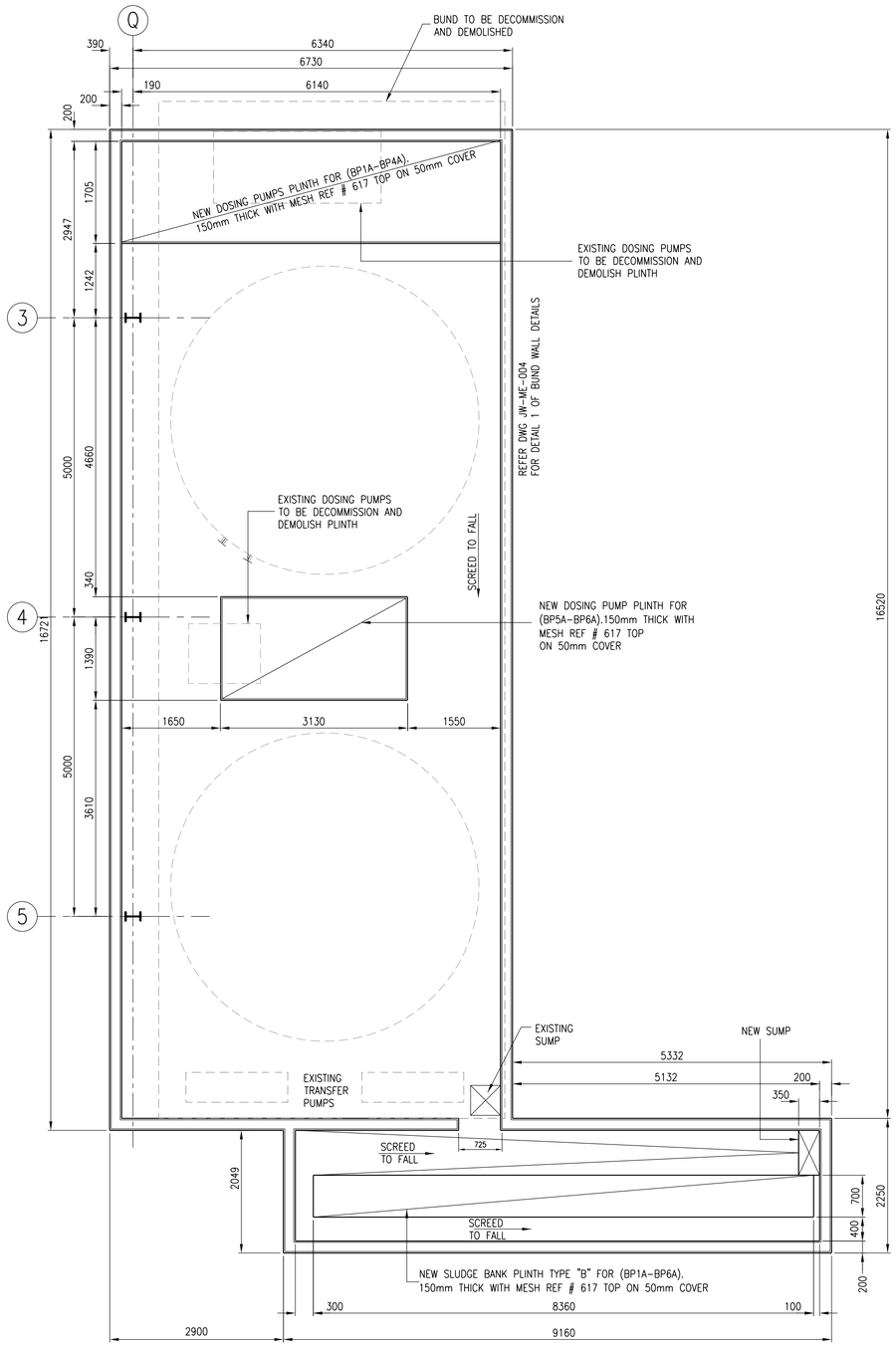
BUND,PLINTH KEY PLAN

SCALE 1:150



DETAIL 1
TYPICAL BUND WALL

SCALE 1:10



STOCK TANK BUND "4" & SLUDGE BANK BUND "5" – PLAN

SCALE 1:50

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. A CONTRACTOR OR SUB-CONTRACTOR SHALL CHECK THE NET LOAD OF THE BELT PRESS AND SEND TO THE ENGINEERING SERVICE MANAGER(EMS) FOR FOUNDATION LOADS DISTRIBUTION.
8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION,OR RELEVANT SABS 1200 SPECIFICATION.
10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSION AND DEMOLISH FOR BUILDING CLEARANCE PRIOR INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT.
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT AND EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY A EMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK-WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa.WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF SABS 1200 G.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ INCONJUCTION WITH ALL DRAWINGS IN JW14060R-GEN-001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS SHALL BE 316 SS UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

REFERENCE DRAWINGS

JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R-ME-003 : SLUDGE VALVE BANK FOR BP1A-BP6A – SECTIONS & DETAILS
JW14060R-ME-004 : SLUDGE VALVE BANK FOR BP1C-BP4C – SECTIONS & DETAILS
JW14060R-ME-005 : NEW POLYMER HOLDING TANK FOR BP1C-BP4C – SECTIONS & DETAILS
JW14060R-ME-008 : WASH WATER STRAINER FOR BP1A-BP6A – SECTIONS & PIPE SCHEDULE
JW14060R-ME-009 : WASH WATER SUPPLY PUMPS – SECTIONS & DETAILS

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
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FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES
CONCRETE-PUMP,SLUDGE VALVE BANK & POLYMER TANK BUND WALLS,PLINTH-SECTIONS & DETAILS-SHT 2 OF 2

DESIGN MANAGER: J. PRINSLOO

DATE 20/02/2020

SCALE: AS SHOWN

AMENDMENTS

		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER: JW14060R-CE-006

CONSULTANT'S NUMBER: H357555-CE-006

FILE No: BWW1403

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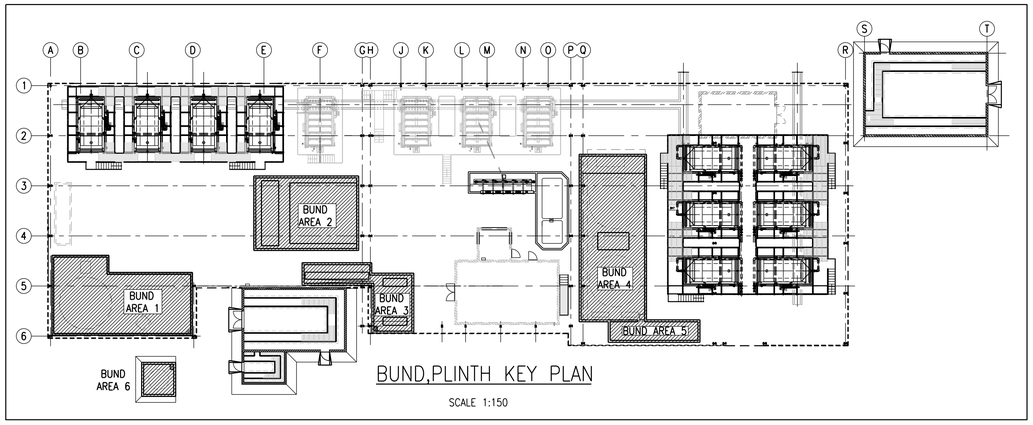
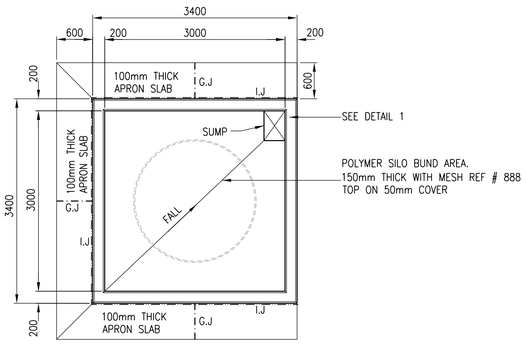


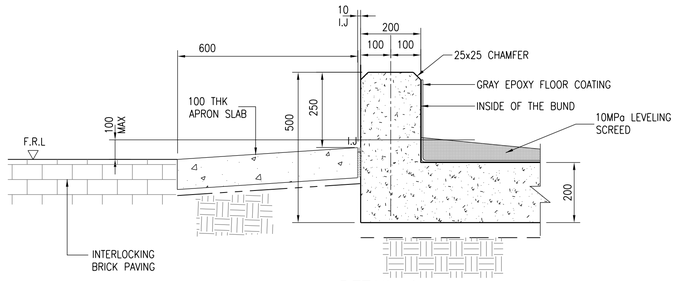
BUND,PLINTH KEY PLAN

SCALE 1:150



POLYMER SILO BUND "6" – PLAN

SCALE 1:50



DETAIL 1
TYPICAL BUND WALL

SCALE 1:10

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
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7. A CONTRACTOR OR SUB-CONTRACTOR SHALL CHECK THE NET LOAD OF THE BELT PRESS AND SEND TO THE ENGINEERING SERVICE MANAGER(EMS) FOR FOUNDATION LOADS DISTRIBUTION.
8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION,OR RELEVANT SABS 1200 SPECIFICATION.
10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSION AND DEMOLISH FOR BUILDING CLEARANCE PRIOR INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT,
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT AND EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY A EMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK-WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa.WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ INCONJUCTION WITH ALL DRAWINGS IN JW14060R-GEN-001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS SHALL BE 316 SS UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

REFERENCE DRAWINGS

JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
POLYMER SILO CONCRETE BUND WALL
SECTION AND DETAIL

DESIGN MANAGER: J. PRINSLOO
DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-CE-007

CONSULTANT'S NUMBER
H357555-CE-007

FILE No
BWW1403

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02-FEB-2022
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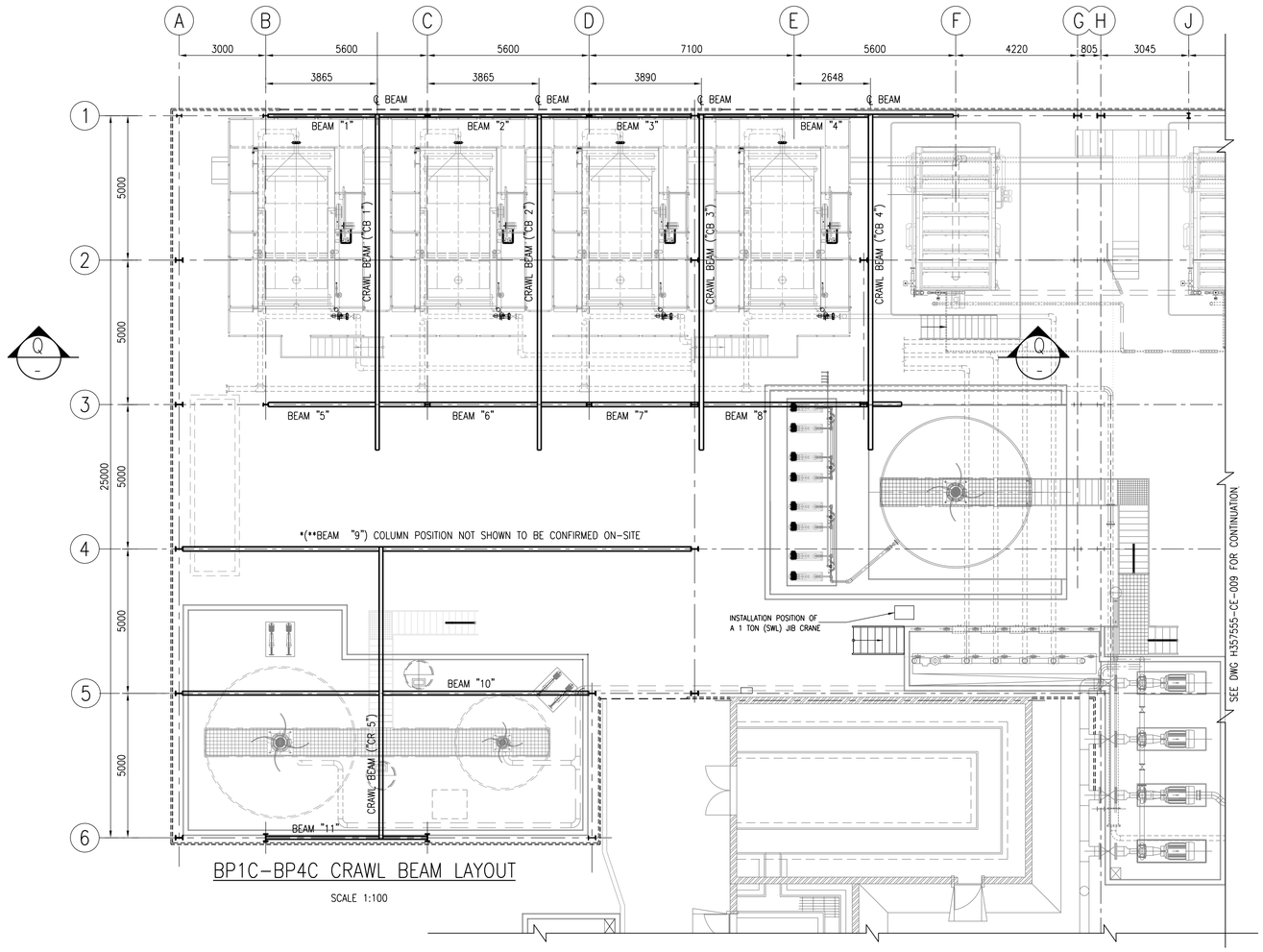
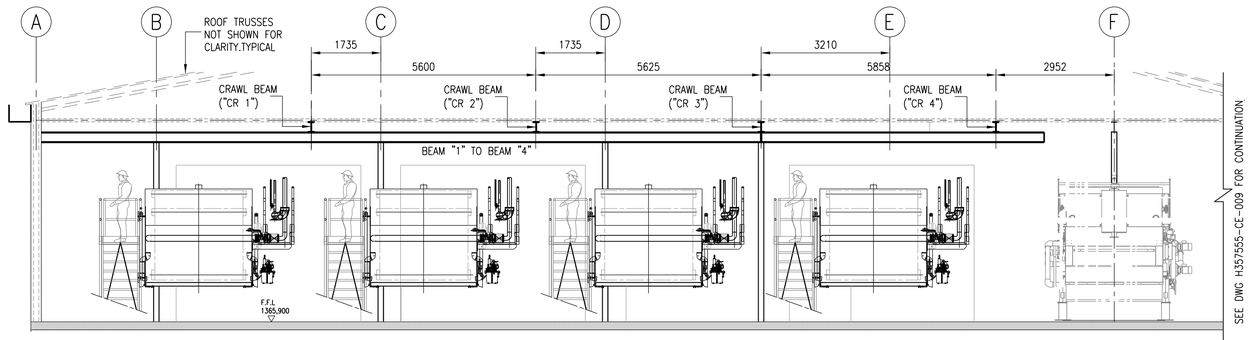
BEAM SCHEDULE FOR BP1C–BP4C AND POLY MAKE–UP UNIT			
BEAM / CRAWL NO.	DESCRIPTION	PRELIMINARY SIZES (MM)	LENGTH (MM)
1,5	SUPPORTING BEAM	254X146X37	5000
2,6	SUPPORTING BEAM	254X146X37	5600
3,7	SUPPORTING BEAM	254X146X37	3800
4	SUPPORTING BEAM	254X146X37	8900
9	SUPPORTING BEAM	254X146X37	17600
10,11	SUPPORTING BEAM	254X146X37	14000
1,2,3,4	CRAWL BEAM	254X146X37	10000
5	CRAWL BEAM	254X146X37	8100
LE–001	1 TON JIB CRANE	–	–



BP1C–BP4C CRAWL BEAM LAYOUT

SCALE 1:100



SECTIONAL ELEVATION Q–Q

SCALE 1:75

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

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MARSHALLTOWN
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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
CRAWL BEAMS FOR BP1C–BP4C
LAYOUT AND SECTION (SHEET 1 OF 2)

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R–CE–008

CONSULTANT'S NUMBER
H357555–CE–008

FILE No
BWW1403

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03-FEB-2022 09:31
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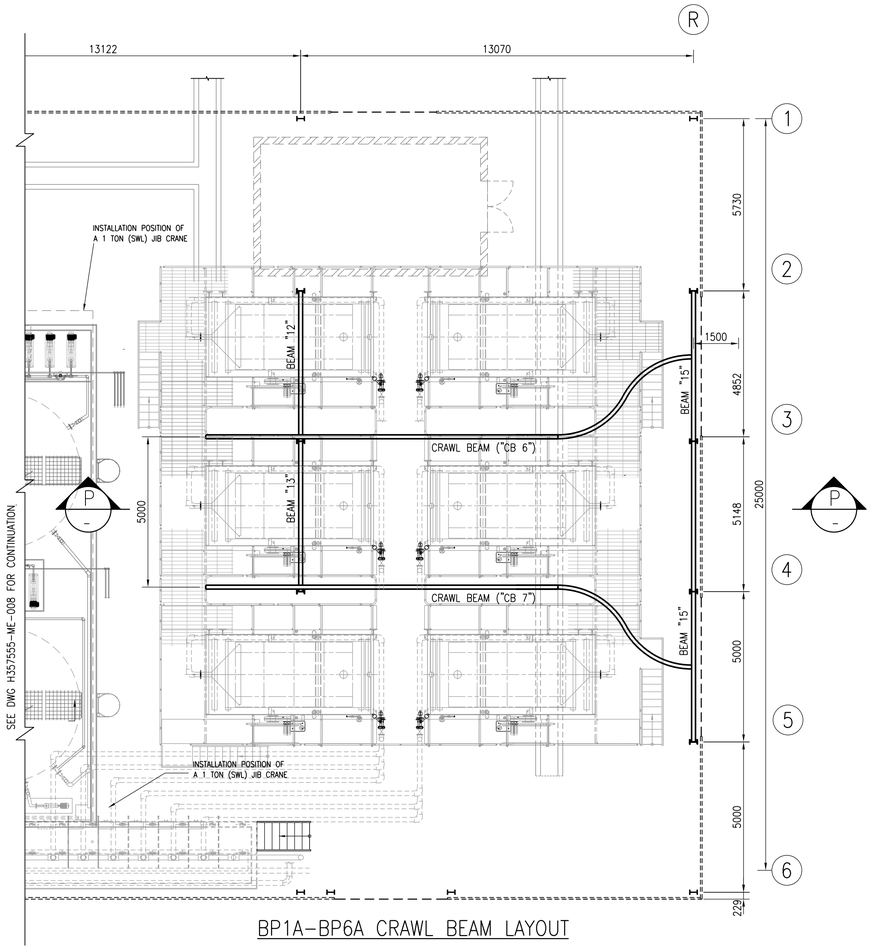
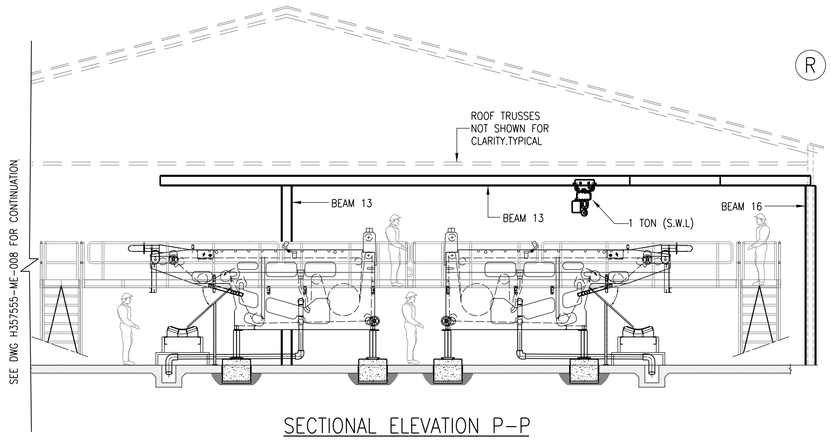
BEAM SCHEDULE FOR BP1A–BP6A			
BEAM / CRAWL NO.	DESCRIPTION	PRELIMINARY SIZES (MM)	LENGTH (MM)
12,13,14,15,16,17	SUPPORTING BEAM	254X146X37	5000
6,7	CRAWL BEAM	254X146X37	1300



BP1A–BP6A CRAWL BEAM LAYOUT

SCALE 1:100



SECTIONAL ELEVATION P–P

SCALE 1:75

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

CRAWL BEAMS FOR BP1A–BP6A

LAYOUT AND SECTION (SHEET 2 OF 2)

DESIGN MANAGER

J. PRINSLOO

DATE 20/02/2020

SCALE

AS SHOWN

AMENDMENTS			
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R–CE–009

CONSULTANT'S NUMBER
H357555–CE–009

FILE No
BWW1403

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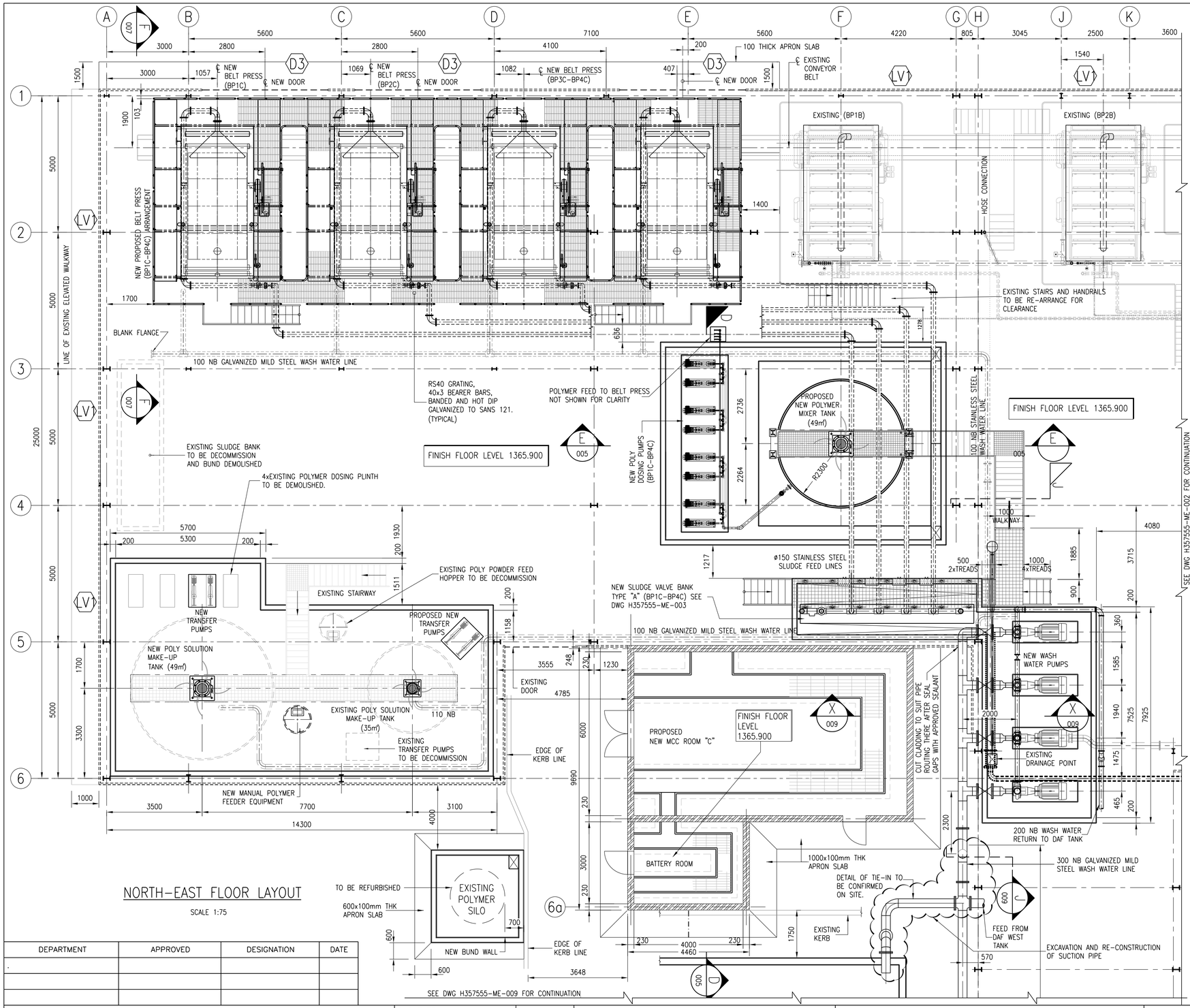

NORTH-EAST FLOOR LAYOUT

SCALE 1:75

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. A CONTRACTOR OR SUB-CONTRACTOR SHALL CHECK THE NET LOAD OF THE BELT PRESS AND SEND TO THE ENGINEERING SERVICE MANAGER(EMS) FOR FOUNDATION LOADS DISTRIBUTION.
8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION,OR RELEVANT SABS 1200 SPECIFICATION.
10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSIONED AND DEMOLISHED FOR BUILDING CLEARANCE PRIOR TO INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT,
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT TO EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY AEMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK-WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa. WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF SABS 1200 G.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ IN CONJUCTION WITH ALL DRAWINGS IN JW14060R-GEN-001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS MUST MATCH PIPEMATERIAL UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

REFERENCE DRAWINGS

JW14060R-STD-001 : DEWATERING AND MCC ACCESS DOORS SCHEDULE AND DETAILS
JW14060R-STD-002 : TYPICAL EQUIPMENT ACCESS STEELS STAIRS, HANDRAILS AND GRATING DETAILS.
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 1)
JW14060R-ME-003 : SLUDGE VALVE BANK FOR BP1A-BP6A – SECTIONS & DETAILS
JW14060R-ME-004 : SLUDGE VALVE BANK FOR BP1C-BP4C – SECTIONS & DETAILS
JW14060R-ME-005 : NEW POLYMER HOLDING TANK FOR BP1C-BP4C – SECTIONS & DETAILS
JW14060R-ME-006 : BELT PRESS FOR BP1A-BP6A – SECTIONS & DETAILS
JW14060R-ME-007 : BELT PRESS FOR BP1C-BP4C – SECTIONS & DETAILS
JW14060R-ME-008 : WASH WATER STRAINER FOR BP1A-BP6A – SECTIONS & PIPE SCHEDULE
JW14060R-ME-009 : WASH WATER SUPPLY PUMPS – SECTIONS & DETAILS
JW14060R-ME-010 : SLUDGE SUPPLY PUMPS SECTIONS AND DETAILS
JW14060R-CE-001 : MCC BUILDING FOR BELT PRESS SET "A" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-002 : MCC BUILDING FOR BELT PRESS SET "A" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-003 : MCC BUILDING FOR BELT PRESS SET "C" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-004 : MCC BUILDING FOR BELT PRESS SET "C" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-005 : PUMP,SLUDGE VALVE BANK & POLYMER TANK CONCRETE BUND WALLS AND PLINTH SECTIONS & DETAILS (SHEET 1 OF 3)
JW14060R-CE-006 : CONCRETE-PUMP,SLUDGE VALVE BANK & POLYMER TANK BUND WALLS AND PLINTH – SECTIONS & DETAILS (SHEET 2 OF 3)
JW14060R-CE-007 : POLYMER SILO CONCRETE BUNG WALL – SECTIONS & DETAILS (SHEET 3 OF 3)
JW14060R-CE-008 : CRAWL BEAM – BP1A-BP4A LAYOUT,SECTIONS AND DETAILS (SHEET 1 OF 2)
JW14060R-CE-009 : CRAWL BEAM – BP1C-BP6C LAYOUT,SECTIONS AND DETAILS (SHEET 2 OF 2)

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT – DEWATERING BUILDING
NORTH-EAST FLOOR PLAN (SHEET 1 OF 2)

DESIGN MANAGER: J. PRINSLOO
DATE: 20/02/2020

SCALE: AS SHOWN

	AMENDMENTS	APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.
JW NUMBER: JW14060R-ME-001
CONSULTANT'S NUMBER: H357555-ME-001
FILE No: BWW1403

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02-FEB-2022
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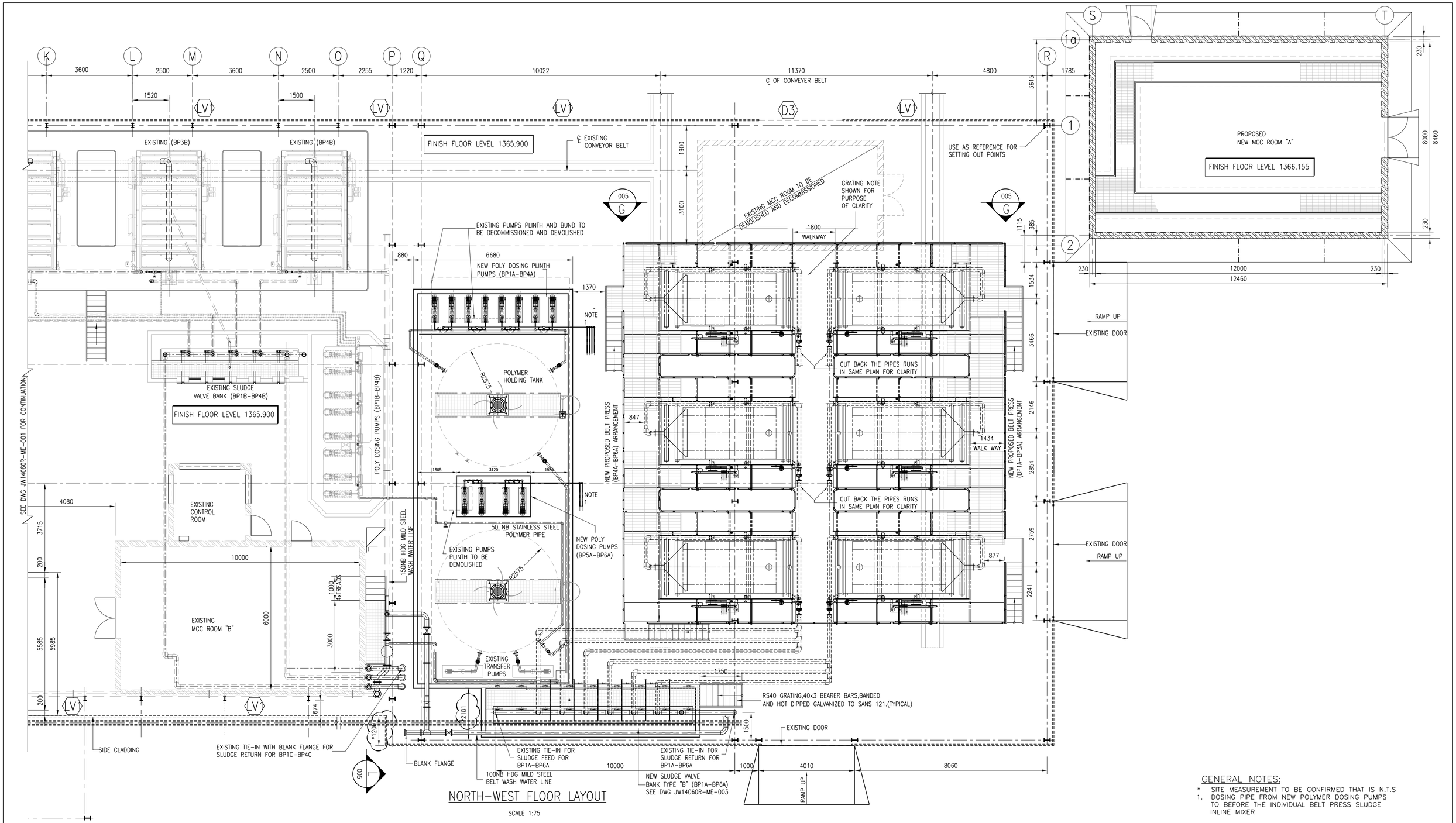

NORTH–WEST FLOOR LAYOUT

SCALE 1:75

GENERAL NOTES:

* SITE MEASUREMENT TO BE CONFIRMED THAT IS N.T.S

1. DOSING PIPE FROM NEW POLYMER DOSING PUMPS TO BEFORE THE INDIVIDUAL BELT PRESS SLUDGE INLINE MIXER

FOR NOTES REFER TO DRAWING JW14060R–ME–001

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT – DEWATERING BUILDING
NORTH–WEST FLOOR PLAN (SHEET 2 OF 10)

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS

		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R–ME–002

CONSULTANT'S NUMBER
H357555–ME–002

FILE No
BWW1403

jdc_pwservice 09:42 2022-02-03
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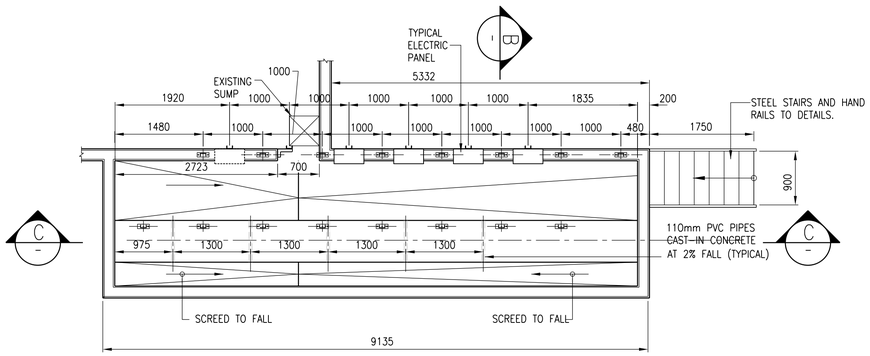
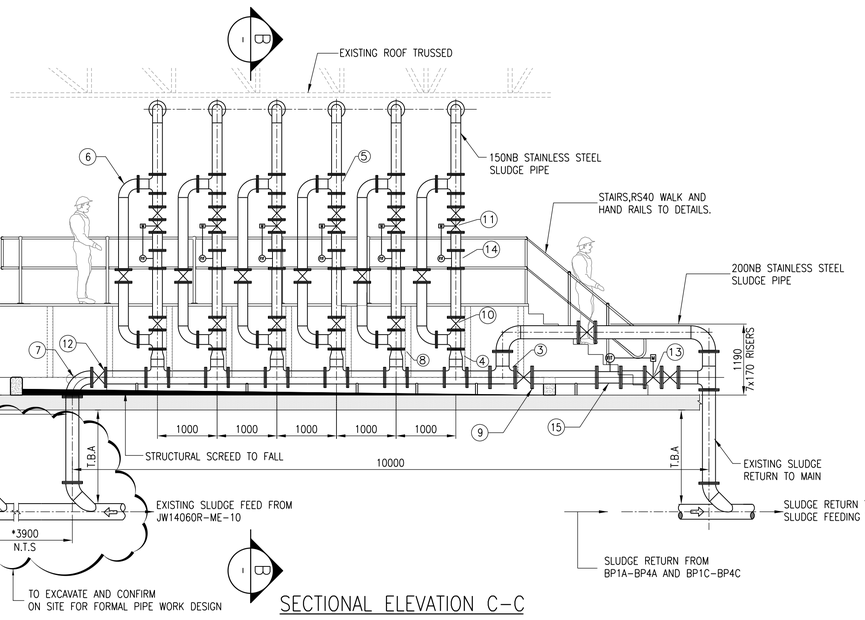


SLUDGE BANK BUND TYPE "B" (BP1A-BP6A) - PLAN

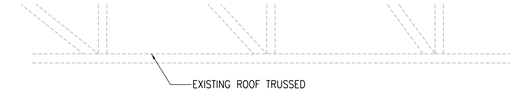
SCALE 1:50

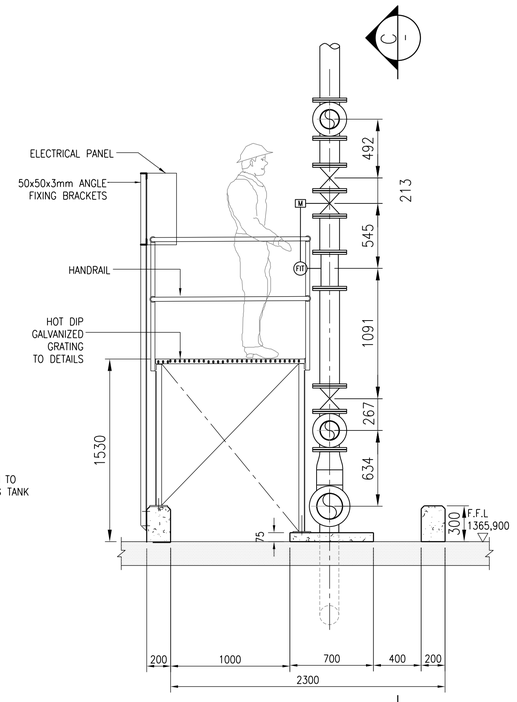
SLUDGE SUPPLY EQUIPMENT AND PIPEWORK SCHEDULE FOR TENDER PURPOSE FOR DRAWINGS JW14060R-ME-003 & JW14060R-ME-004					
ITEM NO.	SPEC NO.	DIA. (MM)	QTY	SIZE (MM)	DESCRIPTION
1	ASME B36.19	200	1	47000	304L STAINLESS STEEL SHCEDULE 10S PIPE
2	ASME B36.19	150	1	405900	304L STAINLESS STEEL SHCEDULE 10S PIPE
3	ASME B16.9	200	16	178 C/F	304L STAINLESS STEEL EQUAL TEE-PIECE
4	ASME B16.9	200 X 150	10	152 F/F	304L STAINLESS STEEL CONCENTRIC REDUCER
5	ASME B16.9	150	20	143 C/F	304L STAINLESS STEEL EQUAL TEE-PIECE
6	ASME B16.9	150	96	229 C/F	304L STAINLESS STEEL 90° LONG RADIUS BEND
7	ASME B16.9	200	17	300 C/F	304L STAINLESS STEEL 90° LONG RADIUS BEND
8	SANS 1123	150	252	1000 / 3	304L STAINLESS STEEL FLANGES
9	SANS 1123	200	76	1000 / 3	304L STAINLESS STEEL FLANGES
10	M20	150	20	PN 10	ISOLATION GATE VALVES
11	M20	150	10	PN 10	MOTORIZED GATE VALVES
12	M20	200	6	PN 10	ISOLATION GATE VALVES
13	M20	200	2	PN 10	MOTORIZED GATE VALVES
14	VOLUME 8	150	10	0.7-30 M³/HR	MAGNETIC FLOWMETER
15	VOLUME 8	200	2	1-400M³/HR	MAGNETIC FLOWMETER



SECTIONAL ELEVATION C-C

SCALE 1:50





SECTIONAL B-B

SCALE 1:25

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. A CONTRACTOR OR SUB-CONTRACTOR SHALL CHECK THE NET LOAD OF THE BELT PRESS AND SEND TO THE ENGINEERING SERVICE MANAGER(EMS) FOR FOUNDATION LOADS DISTRIBUTION.
8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION,OR RELEVANT SABS 1200 SPECIFICATION.
10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSIONED AND DEMOLISHED FOR BUILDING CLEARANCE PRIOR TO INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT,
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT TO EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY AEMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK-WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa. WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF SABS 1200 G.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ INCONJUCTION WITH ALL DRAWINGS IN JW14060R-GEN-001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS MUST MATCH PIPEMATERIAL UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

REFERENCE DRAWINGS

JW14060R-STD-001 : DEWATERING AND MCC ACCESS DOORS SCHEDULE AND DETAILS
JW14060R-STD-002 : TYPICAL EQUIPMENT ACCESS STEELS STAIRS, HANDRAILS AND GRATING DETAILS.
JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R-ME-004 : SLUDGE VALVE BANK FOR BP1C-BP4C - SECTIONS & DETAILS
JW14060R-ME-005 : NEW POLYMER HOLDING TANK FOR BP1C-BP4C - SECTIONS & DETAILS
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JW14060R-ME-007 : BELT PRESS FOR BP1C-BP4C - SECTIONS & DETAILS
JW14060R-ME-008 : WASH WATER STRAINER FOR BP1A-BP6A - SECTIONS & PIPE SCHEDULE
JW14060R-ME-009 : WASH WATER SUPPLY PUMPS - SECTIONS & DETAILS
JW14060R-ME-010 : SLUDGE SUPPLY PUMPS SECTIONS AND DETAILS
JW14060R-CE-001 : MCC BUILDING FOR BELT PRESS SET "A" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-002 : MCC BUILDING FOR BELT PRESS SET "A" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-003 : MCC BUILDING FOR BELT PRESS SET "C" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-004 : MCC BUILDING FOR BELT PRESS SET "C" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-005 : PUMP,SLUDGE VALVE BANK & POLYMER TANK CONCRETE BUND WALLS AND PLINTH SECTIONS & DETAILS (SHEET 1 OF 3)
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JW14060R-CE-007 : POLYMER SILO CONCRETE BUNG WALL - SECTIONS & DETAILS (SHEET 3 OF 3)
JW14060R-CE-008 : CRAWL BEAM - BP1A-BP4A LAYOUT,SECTIONS AND DETAILS (SHEET 1 OF 2)
JW14060R-CE-009 : CRAWL BEAM - BP1C-BP6C LAYOUT,SECTIONS AND DETAILS (SHEET 2 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT-SLUDGE VALVE BANK FOR BP1A-6A SECTIONS AND DETAILS

DESIGN MANAGER: J. PRINSLOO
DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-003
CONSULTANT'S NUMBER
H357555-ME-003
FILE No
BWW1403

jdc pwsenvice 09:21
03-FEB-2022
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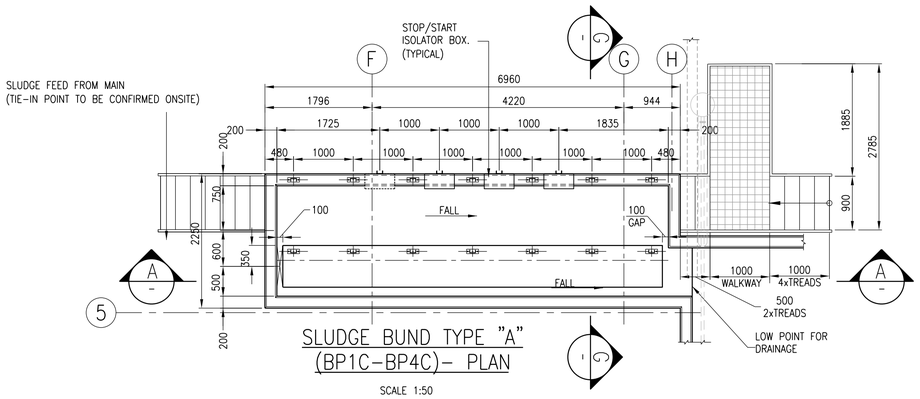
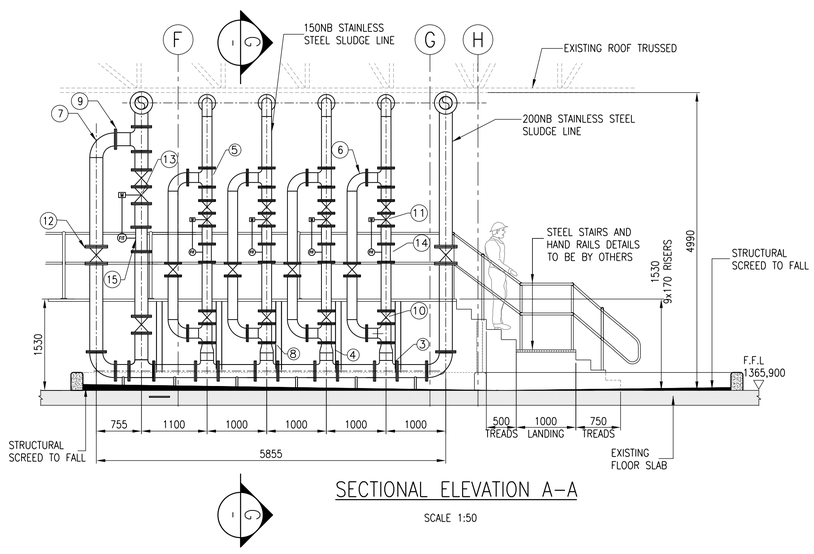


SLUDGE BUND TYPE "A"
(BP1C-BP4C)- PLAN

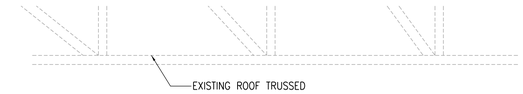
SCALE 1:50

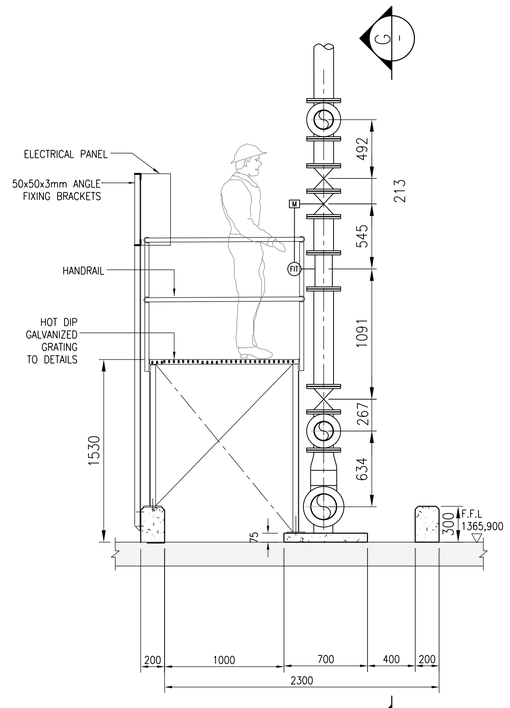


SECTIONAL ELEVATION A-A

SCALE 1:50

SLUDGE SUPPLY EQUIPMENT AND PIPEWORK SCHEDULE FOR TENDER PURPOSE FOR DRAWINGS JW14060R-ME-003 & JW14060R-ME-004					
ITEM NO.	SPEC NO.	DIA. (MM)	QTY	SIZE (MM)	DESCRIPTION
1	ASME B36.19	200	1	47000	304L STAINLESS STEEL SHCEDULE 10S PIPE
2	ASME B36.19	150	1	405900	304L STAINLESS STEEL SHCEDULE 10S PIPE
3	ASME B16.9	200	16	178 C/F	304L STAINLESS STEEL EQUAL TEE-PIECE
4	ASME B16.9	200 X 150	10	152 F/F	304L STAINLESS STEEL CONCENTRIC REDUCER
5	ASME B16.9	150	20	143 C/F	304L STAINLESS STEEL EQUAL TEE-PIECE
6	ASME B16.9	150	96	229 C/F	304L STAINLESS STEEL 90° LONG RADIUS BEND
7	ASME B16.9	200	17	300 C/F	304L STAINLESS STEEL 90° LONG RADIUS BEND
8	SANS 1123	150	252	1000 / 3	304L STAINLESS STEEL FLANGES
9	SANS 1123	200	76	1000 / 3	304L STAINLESS STEEL FLANGES
10	M20	150	20	PN 10	ISOLATION GATE VALVES
11	M20	150	10	PN 10	MOTORIZED GATE VALVES
12	M20	200	6	PN 10	ISOLATION GATE VALVES
13	M20	200	2	PN 10	MOTORIZED GATE VALVES
14	VOLUME 8	150	10	0.7-30 M³/HR	MAGNETIC FLOWMETER
15	VOLUME 8	200	2	1-400M³/HR	MAGNETIC FLOWMETER





SECTIONAL B-B

SCALE 1:25

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2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
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DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT-SLUDGE VALVE BANK FOR BP1C-4AC
SECTIONS AND DETAILS

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

	AMENDMENTS	APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-004
CONSULTANT'S NUMBER
H357555-ME-004
FILE No
BWW1403

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03-FEB-2022
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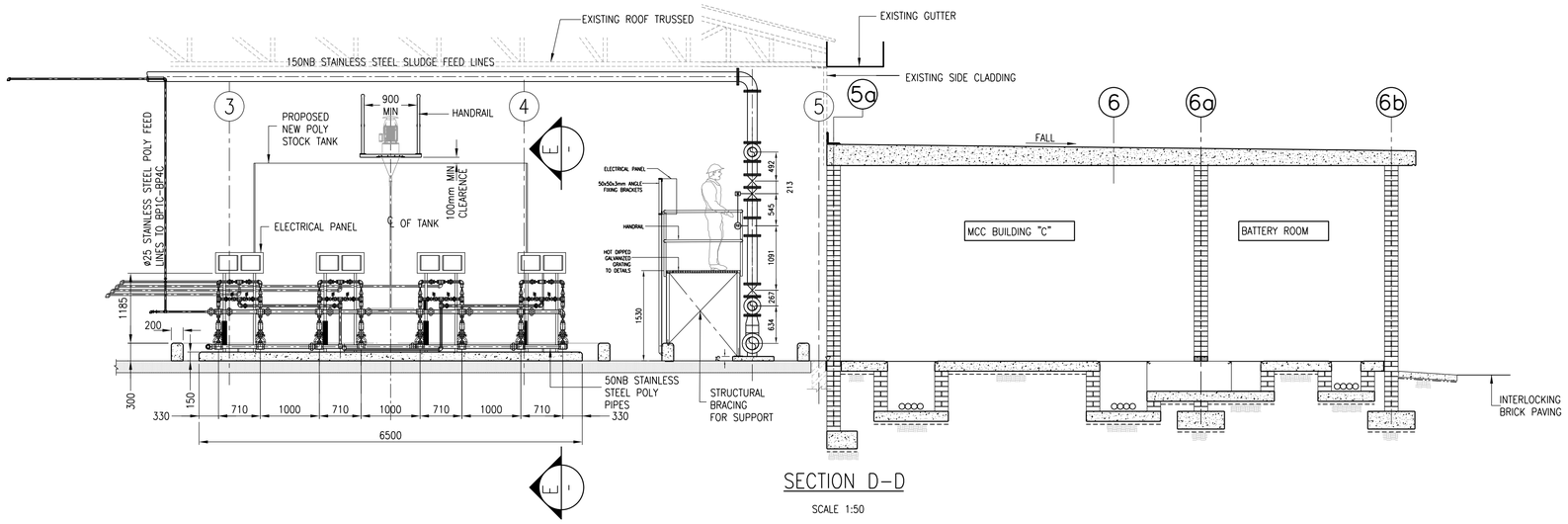
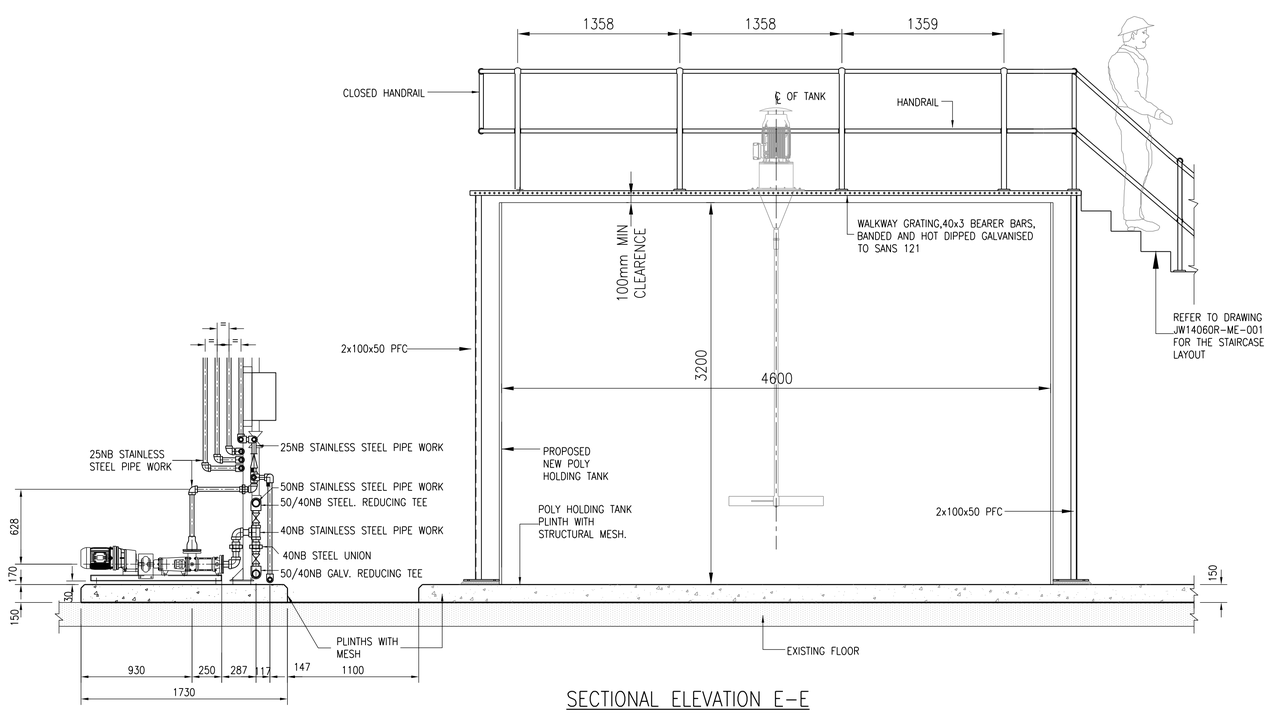


SECTION D-D

SCALE 1:50



SECTIONAL ELEVATION E-E

SCALE 1:25

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4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS MUST MATCH PIPEMATERIAL UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

REFERENCE DRAWINGS

JW14060R-STD-001 : DEWATERING AND MCC ACCESS DOORS SCHEDULE AND DETAILS
JW14060R-STD-002 : TYPICAL EQUIPMENT ACCESS STEELS STAIRS, HANDRAILS AND GRATING DETAILS.
JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R-ME-003 : SLUDGE VALVE BANK FOR BP1A-BP6A - SECTIONS & DETAILS
JW14060R-ME-004 : SLUDGE VALVE BANK FOR BP1C-BP4C - SECTIONS & DETAILS
JW14060R-ME-006 : BELT PRESS FOR BP1A-BP6A - SECTIONS & DETAILS
JW14060R-ME-007 : BELT PRESS FOR BP1C-BP4C - SECTIONS & DETAILS
JW14060R-ME-008 : WASH WATER STRAINER FOR BP1A-BP6A - SECTIONS & PIPE SCHEDULE
JW14060R-ME-009 : WASH WATER SUPPLY PUMPS - SECTIONS & DETAILS
JW14060R-ME-010 : SLUDGE SUPPLY PUMPS SECTIONS AND DETAILS
JW14060R-CE-001 : MCC BUILDING FOR BELT PRESS SET "A" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-002 : MCC BUILDING FOR BELT PRESS SET "A" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-003 : MCC BUILDING FOR BELT PRESS SET "C" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-004 : MCC BUILDING FOR BELT PRESS SET "C" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-005 : PUMP,SLUDGE VALVE BANK & POLY TANK CONCRETE BUND WALLS AND PLINTH SECTIONS & DETAILS (SHEET 1 OF 3)
JW14060R-CE-006 : CONCRETE-PUMP,SLUDGE VALVE BANK & POLY TANK BUND WALLS AND PLINTH - SECTIONS & DETAILS (SHEET 2 OF 3)
JW14060R-CE-007 : POLY SILO CONCRETE BUNG WALL - SECTIONS & DETAILS (SHEET 3 OF 3)
JW14060R-CE-008 : CRAWL BEAM - BP1A-BP4A LAYOUT,SECTIONS AND DETAILS (SHEET 1 OF 2)
JW14060R-CE-009 : CRAWL BEAM - BP1C-BP6C LAYOUT,SECTIONS AND DETAILS (SHEET 2 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT-NEW POLY HOLDING TANK FOR PB1C-BP4C SECTIONS AND DETAILS

DESIGN MANAGER: J. PRINSLOO
DATE: 20/02/2020

SCALE: AS SHOWN

	AMENDMENTS	APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-005
CONSULTANT'S NUMBER
H357555-ME-005
FILE No
BWW1403

jdc pwservice 09:33
03-FEB-2022
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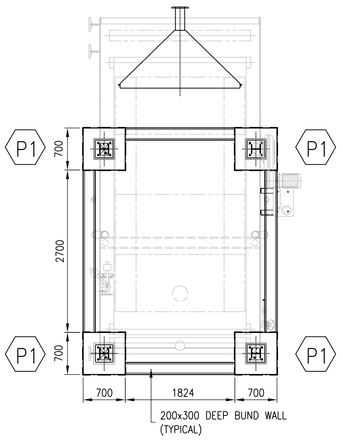
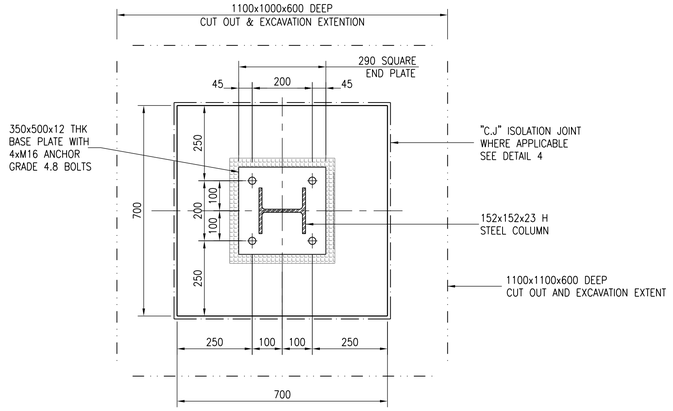


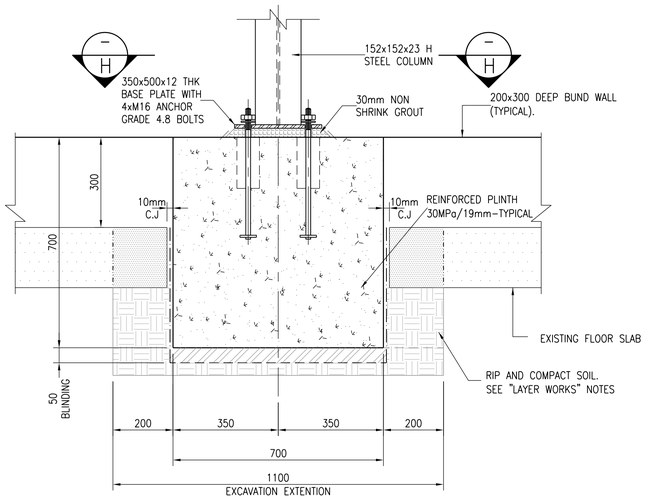
BELT PRESS FOOTING-PLAN

SCALE 1:50



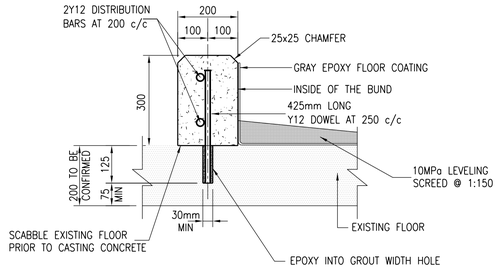
SECTIONAL PLAN H-H
FOOTING TYPE "P1"

SCALE 1:10



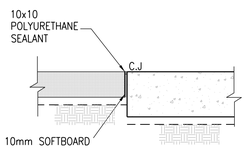
DETAIL 2

SCALE 1:10



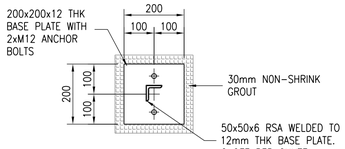
DETAIL 1
TYPICAL BELT PRESS BUND WALL

SCALE 1:10



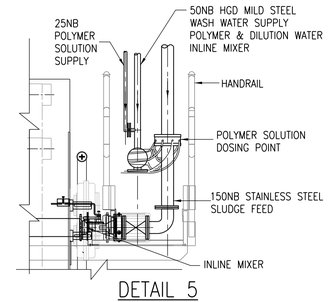
CONSTRUCTION JOINT (C.J)

SCALE 1:20



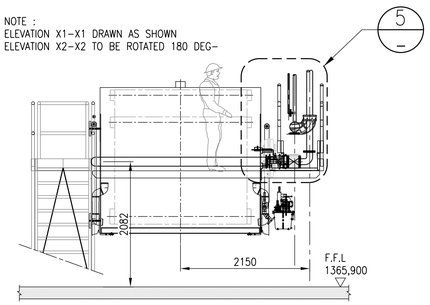
DETAIL 4

SCALE 1:10



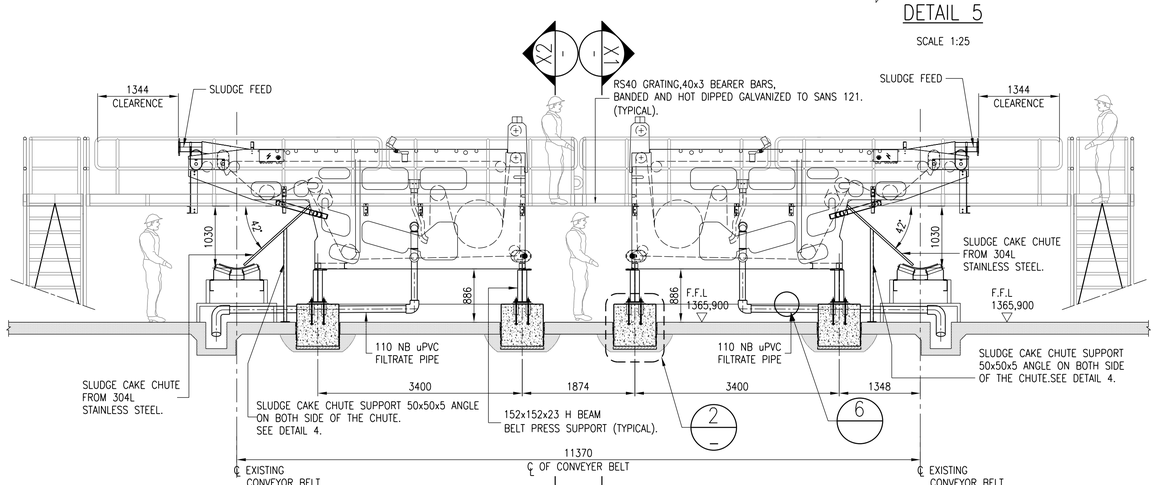
DETAIL 5

SCALE 1:25



TYPICAL ELEVATION X1-X1 & X2-X2

SCALE 1:50



ELEVATION G-G

SCALE 1:50

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. A CONTRACTOR OR SUB-CONTRACTOR SHALL CHECK THE NET LOAD OF THE BELT PRESS AND SEND TO THE ENGINEERING SERVICE MANAGER(EMS) FOR FOUNDATION LOADS DISTRIBUTION.
8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION,OR RELEVANT SABS 1200 SPECIFICATION.
10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSIONED AND DEMOLISHED FOR BUILDING CLEARANCE PRIOR TO INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT,
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT TO EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY AEMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK-WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa. WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF SABS 1200 G.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ IN CONJUCTION WITH ALL DRAWINGS IN JW14060R-GEN-001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS MUST MATCH PIPEMATERIAL UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

REFERENCE DRAWINGS

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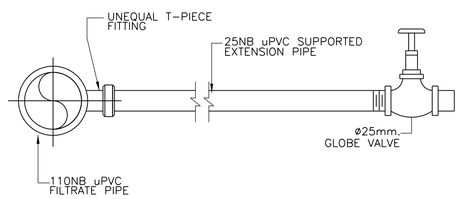
JW14060R-STD-002 : TYPICAL EQUIPMENT ACCESS STEELS STAIRS, HANDRAILS AND GRATING DETAILS.
JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R-CE-008 : CRAWL BEAM - BP1A-BP4A LAYOUT,SECTIONS AND DETAILS (SHEET 1 OF 2)
JW14060R-CE-009 : CRAWL BEAM - BP1C-BP6C LAYOUT,SECTIONS AND DETAILS (SHEET 2 OF 2)



DETAIL 6 (SAMPLING POINT/LINE FOR X6 BELT PRESSES)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT- BELT PRESS FOR BP1A-BP6A SECTIONS AND DETAILS (SHEET 1 OF 2)

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-006

CONSULTANT'S NUMBER
H357555-ME-006

FILE No
BWW1403

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03-FEB-2022
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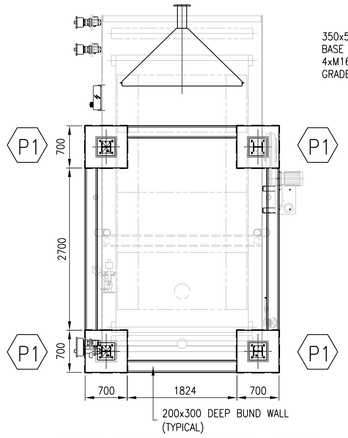
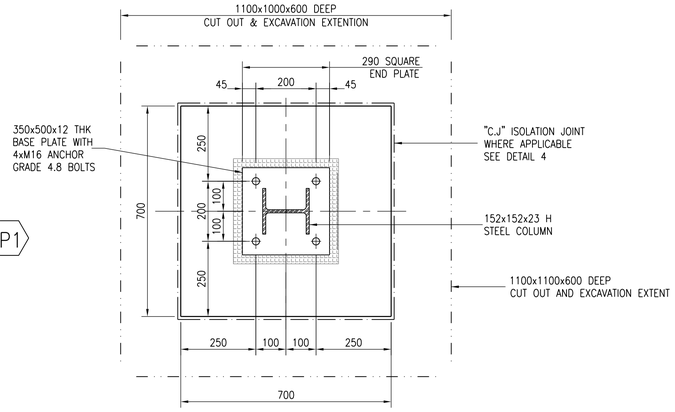


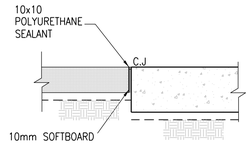
BELT PRESS FOOTING–PLAN

SCALE 1:50



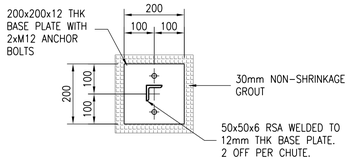
SECTIONAL PLAN H–H
FOOTING TYPE "P1"

SCALE 1:10



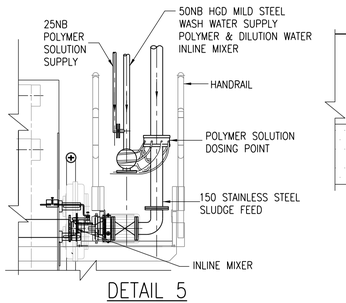
CONSTRUCTION JOINT (C.J)

SCALE 1:20



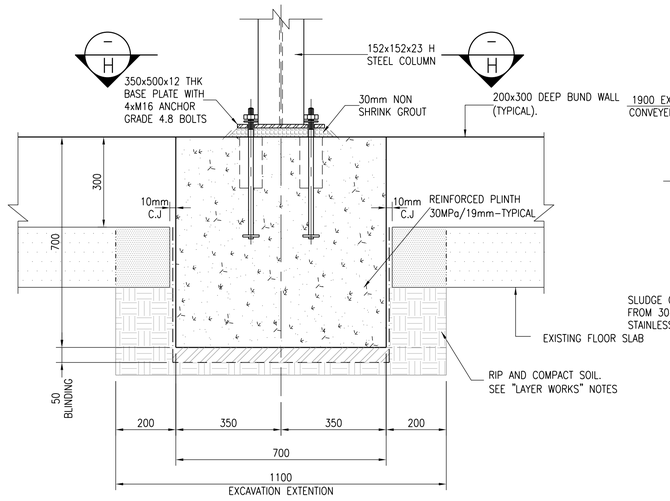
DETAIL 4

SCALE 1:10



DETAIL 5

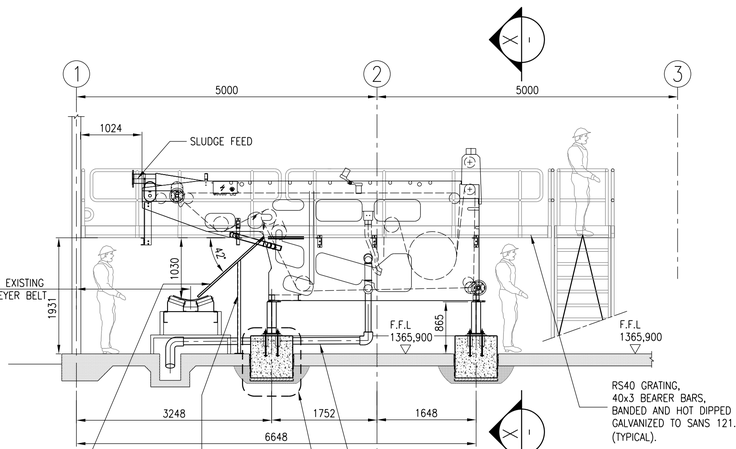
SCALE 1:25



DETAIL 2

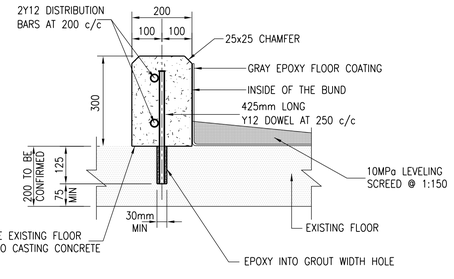
SCALE 1:10

4 OFF PER BELT PRESS



SECTIONAL ELEVATION F–F

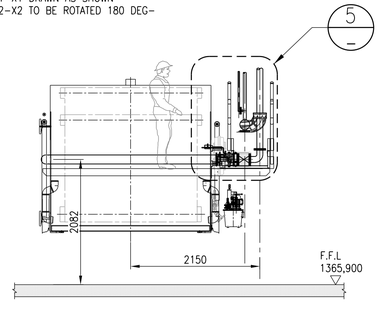
SCALE 1:50



DETAIL 1
TYPICAL BELT PRESS BUND WALL

SCALE 1:10

NOTE :
ELEVATION X1–X1 DRAWN AS SHOWN
ELEVATION X2–X2 TO BE ROTATED 180 DEG–



TYPICAL ELEVATION X–X

SCALE 1:50

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
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8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
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10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSIONED AND DEMOLISHED FOR BUILDING CLEARANCE PRIOR TO INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

FOUNDATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT,
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT TO EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY AEMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK–WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa. WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
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9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF SABS 1200 G.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

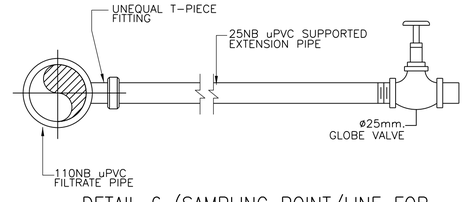
TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ INCONJUCTION WITH ALL DRAWINGS IN JW14060R–GEN–001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123–SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS MUST MATCH PIPEMATERIAL UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

REFERENCE DRAWINGS

JW14060R–STD–001 : DEWATERING AND MCC ACCESS DOORS SCHEDULE AND DETAILS
JW14060R–STD–002 : TYPICAL EQUIPMENT ACCESS STEELS STAIRS, HANDRAILS AND GRATING DETAILS.
JW14060R–ME–001 : DEWATERING BLD NORTH–WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R–ME–002 : DEWATERING BLD NORTH–EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R–CE–007 : POLYMER SILO CONCRETE BUNG WALL – SECTIONS & DETAILS (SHEET 3 OF 3)
JW14060R–CE–008 : CRAWL BEAM – BP1A–BP4A LAYOUT,SECTIONS AND DETAILS (SHEET 1 OF 2)
JW14060R–CE–009 : CRAWL BEAM – BP1C–BP6C LAYOUT,SECTIONS AND DETAILS (SHEET 2 OF 2)



DETAIL 6 (SAMPLING POINT/LINE FOR X4 BELT PRESSES)

SCALE 1:5

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT–BELT PRESS FOR BP1C–BP4C SECTIONS AND DETAILS (SHEET 2 OF 2)

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

	AMENDMENTS	APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R–ME–007

CONSULTANT'S NUMBER
H357555–ME–007

FILE No
BWW1403

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03-FEB-2022
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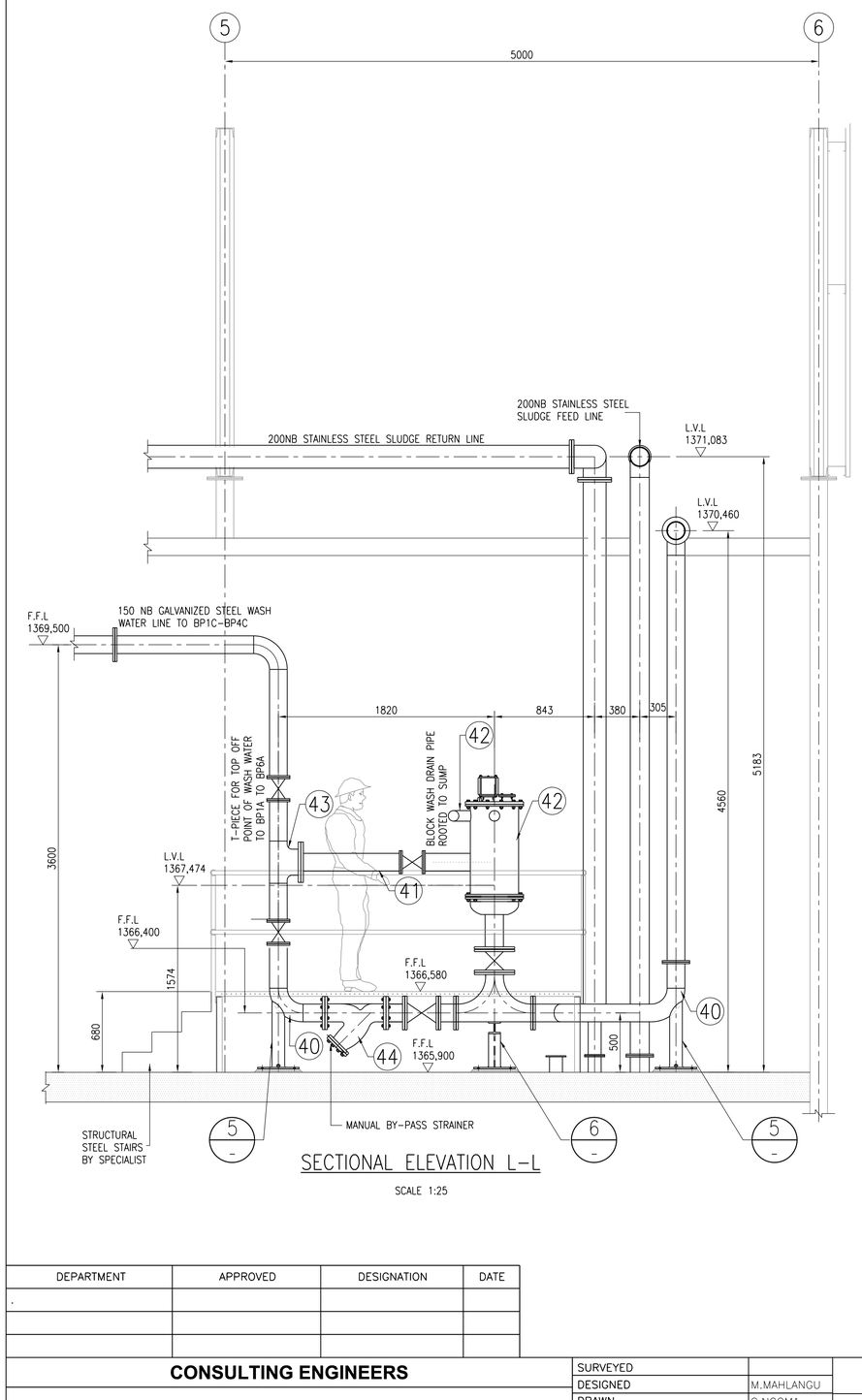

SECTIONAL ELEVATION L-L

SCALE 1:25

WASH WATER SUPPLY DELIVERY EQUIPMENT AND PIPEWORK SCHEDULE FOR TENDER PURPOSE					
ITEM NO.	SPEC NO.	DIA. (MM)	QTY	SIZE (mm)	DESCRIPTION
1	PSX 4.6	–	4	–	WASH WATER SUPPLY PUMPS AT THE DEWATERING BUILDING WITH DRIVE UNITS @ 250 m?/hr AT 85m
2	SANS 62	100–150	4	140 F/F	150NB TO 100NB CONCENTRIC REDUCER WITH ONE END WELDED AND FLANGED ON THE OTHER
3	SANS 62	150	4	150 F/F	HDG MILD STEEL PIPE , WITH ONE END WELDED AND FLANGED ON THE OTHER
4	M21	150	4	356 F/F	SWING NON-RETURN VALVE FLANGED BOTH SIDES
5	SANS 62	150	4	215 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
6	M21	150	8	210 F/F	FLANGED RESELIENT SEAL GATE VALVE
7	M18	15	4	–	GLYCERIN FILLED PRESSURE GAUGES WITH TELL TALE INSTALLED WITH EACH ANCILLARIES AS PER DETAIL 8
8	SANS 62	150	1	198 F/F	HDG MILD STEEL PIPE , WITH ONE END WELDED AND FLANGED ON THE OTHER
9	SANS 719	200–150	4	180 F/F	200NB TO 150NB CONCENTRIC REDUCER WELDED ON BOTH ENDS
10	ASME B16.9	200	3	405 C/F	HDG MILD STEEL 90° RADIUS BEND WELDED
11	SANS 719	200	1	1443 F/F	HDG MILD STEEL PIPE , WITH ONE END WELDED AND FLANGED ON THE OTHER
12	SANS 719	200	1	230 C/F	HDG MILD STEEL FLANGED EQUAL CROSS TEE-PIECE
13	SANS 719	200	1	225 F/F	HDG MILD STEEL PIPE , WITH BOTH ENDS WELDED
14	SANS 719	200	2	1395 F/F	HDG MILD STEEL PIPE , WITH ONE END WELDED AND FLANGED ON THE OTHER
15	SANS 719	200	1	946 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
16	M21	200	3	283 F/F	FLANGED RESELIENT SEAL GATE VALVE
17	SANS 719	200	1	326 F/F	HDG MILD STEEL PIPE FLANGFED BOTH SIDES
18	SANS 719	200	3	381 F/F	HDG MILD STEEL FLANGED EQUAL TEE-PIECE
19	SANS 719	200	1	1565 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
20	SANS 719	200	1	444 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
21	SANS 62	150	1	334 C/F	HDG MILD STEEL FLANGED EQUAL BOTTLE TEE-PIECE WITH THE BIGGER FACE END DIA. OF 200mm
22	M21	150	7	454 F/F	WASH WATER CONTROL VALVES (PRESSURE REDUCING AND FLOW CONTROL)
23	SANS 62	150	1	584 F/F	HDG MILD STEEL PIPE , WITH ONE END WELDED AND FLANGED ON THE OTHER
24	SANS 62	150	2	1540 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
25	ASME B16.9	150	6	208 C/F	HDG MILD STEEL 90° RADIUS BEND FLANGED ON BOTH ENDS
26	SANS 62	150	1	1787 F/F	HDG MILD STEEL PIPE PLAIN ENDS
27	SANS 62	150	1	240 C/F	HDG MILD STEEL FLANGED EQUAL TEE-PIECE
28	PSX 4.6	150	1	–	WASH WATER AUTOMATIC BACKWASH STRAINER
29	SANS 62	150	3	277 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
30	PSX 4.6	150	1	515 F/F	WASH WATER MANUAL BYPASS STRAINER
31	SANS 62	150	1	352 F/F	HDG MILD STEEL PIPE , WITH ONE END WELDED AND FLANGED ON THE OTHER
32	SANS 62	150	1	628 C/F	TRUNIION/ DUCKFOOT SUPPORT WITH 90° RADIUS ELBOW WELDED AS PER DETAIL K-K
33	SANS 62	150	1	362 F/F	HDG MILD STEEL PIPE , WITH ONE END WELDED AND FLANGED ON THE OTHER
34	SANS 62	150	2	240 C/F	HDG MILD STEEL FLANGED EQUAL TEE-PIECE
35	SANS 62	150	2	720 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
36	SANS 62	150	1	853 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
37	SANS 62	150	1	2264 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
38	SANS 62	50	2	11270	HDG MILD STEEL PIPE PLAIN ENDS (SITE RUN PIPE)
39	SANS 62	50	4	159 C/F	HDG MILD STEEL FLANGED MEDIUM RADIUS 90° BEND
40	SANS 719	200	2	–	TRUNIION/ DUCKFOOT SUPPORT WITH 90 MEDIUM RADIUS ELBOW BEND
41	SANS 719	200	1	2500 F/F	HDG MILD STEEL PIPE PLAIN ENDS
42	PSX 4.6	200	1	–	WASH WATER AUTOMATIC BACKWASH STRAINER
43	SANS 719	200	1	230 C/F	HDG MILD STEEL FLANGED EQUAL TEE-PIECE
44	PSX 4.6	200	1	515 F/F	WASH WATER MANUAL BYPASS STRAINER
54	SANS 719	200	1	230 C/F	HDG MILD STEEL FLANGED UNEQUAL 200X150 TEE-PIECE
55	SANS 719	200	2	12000 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS
56	SANS 62	150	1	5280 F/F	HDG MILD STEEL PIPE FLANGED BOTH ENDS

WASH WATER SUPPLY SUCTION EQUIPMENT AND PIPEWORK SCHEDULE FOR TENDER PURPOSE					
ITEM NO.	SPEC NO.	DIA. (MM)	QTY	SIZE (mm)	DESCRIPTION
45	M18	–	4	–	GLYCERIN FILLED PRESSURE GAUGES WITH TELL TALE INSTALLED WITH EACH ANCILLARIES AS PER DETAIL 8
46	SANS 719	300–150	4	230 C/F	300NB TO 150NB ECCENTRIC FLAT TOP REDUCER FLANGED ON ONE END AND WELDED ON THE OTHER
47	SANS 719	300	4	231 F/F	EPOXY COATED MILD STEEL PIPE , WITH ONE END WELDED AND FLANGED ON THE OTHER
48	M21	300	6	546 F/F	FLANGED RESELIENT SEAL GATE VALVE
49	ASME B16.9	300	6	610 C/F	EPOXY COATED MILD STEEL FLANGED LONG RADIUS 90° BEND
50	SANS 719	300	4	1230 F/F	EPOXY COATED MILD STEEL FLANGED ON BOTH ENDS
51	SANS 719	300	3	305 C/F	EPOXY COATED MILD STEEL FLANGED EQUAL TEE-PIECE
52	SANS 719	300	2	12000 F/F	EPOXY COATED MILD STEEL PIPE , WITH PLAIN ENDS
53	SANS 719	300	2	610 C/F	EPOXY COATED MILD STEEL . EQUAL CROSS TEE FLANGED.

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. A CONTRACTOR OR SUB-CONTRACTOR SHALL CHECK THE NET LOAD OF THE BELT PRESS AND SEND TO THE ENGINEERING SERVICE MANAGER(EMS) FOR FOUNDATION LOADS DISTRIBUTION.
8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION,OR RELEVANT SABS 1200 SPECIFICATION.
10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSIONED AND DEMOLISHED FOR BUILDING CLEARANCE PRIOR TO INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

FOUNDATION PREPARATION:

1. REMOVE 600mm OF MATERIAL FROM BELOW THE FLOORS/GROUND SLAB.
2. COMPACT BASE TO APPROXIMATELY 95% MODAASHTO DENSITY OPTIMUM MOISTURE CONTENT,
3. REPLACE WITH WITH G7 OR BETTER MATERIAL COMPACTED IN 2x150mm LAYERS TO 95% MODAASHTO DENSITY AT OPTIMUM MOISTURE CONTENT UP TO THE REQUIRED FOUNDING LEVEL.
4. THE EXISTING SURFACE BED SHOULD BE CUT AND EXPOSE THE SOIL UNDERNEATH,TEST SHOULD BE UNDERTAKEN FOR SOIL DENSITY.
5. BEFORE CONCRETING TAKES PLACE ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED ON SITE BY AEMPLOYER'S AGENT OR REPRESENTATIVE AND APPROVED.
6. ALL FOUNDATION TO BE FOUNDED ON SOFT ROCK-WEATHERED GNEISS.DESIGN BEARING PRESSURE 500KPa. WHERE THIS IS NOT ENCOUNTERED AT FOUNDING LEVEL OVER EXCAVATE AND BACKFILL WITH 10MPa MASS CONCRETE.
7. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE FORMED.
8. IF EXTERNAL CONCRETE IS NOT FORMED, 25MM OF CONCRETE IS TO BE ADDED TO CREATE COVER OF 75MM.
9. BACKFILL TO ROCK FACES AT PIPE TRENCH ENDS WITH 2MPa SOILCRETE

CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF SABS 1200 G.
2. PROVIDE A 25MM x 25MM CHAMFER TO ALL EXPOSED CORNERS.
3. ALL EXPOSED CONCRETE WORK TO BE SMOOTH FINISH.
4. ALL INSIDE LEVELS REFER TO CONCRETE AND NOT TO FINISHED FLOOR EXCEPT WHERE OTHERWISE INDICATED.
5. THE GRADES OF CONCRETE AT 28 DAYS, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

SLABS / BEAMS/ WALLS	CLASS 30/19
FOUNDATIONS/ PLINTHS	CLASS 30/19
SURFACE BEDS	CLASS 30/19
STAIRS	CLASS 30/19
BLINDING LAYERS	CLASS 10/19
MASS CONCRETE	CLASS 10/19

6. UNFORMED SURFACE FINISHES:

TOP OF FLOOR SLABS	POWERFLOAT.
TOP OF WALLS & PLINTHS	STEELFLOAT
TRENCH FLOORS	STEELFLOAT.
TOP OF BASES	WOOD FLOATED.

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ INCONJUCTION WITH ALL DRAWINGS IN JW14060R-GEN-001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS MUST MATCH PIPEMATERIAL UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

REFERENCE DRAWINGS

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JW14060R-STD-002 : TYPICAL EQUIPMENT ACCESS STEELS STAIRS, HANDRAILS AND GRATING DETAILS.
JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R-ME-003 : SLUDGE VALVE BANK FOR BP1A-BP6A – SECTIONS & DETAILS
JW14060R-ME-004 : SLUDGE VALVE BANK FOR BP1C-BP4C – SECTIONS & DETAILS
JW14060R-ME-005 : NEW POLYMER HOLDING TANK FOR BP1C-BP4C – SECTIONS & DETAILS
JW14060R-ME-006 : BELT PRESS FOR BP1A-BP6A – SECTIONS & DETAILS
JW14060R-ME-007 : BELT PRESS FOR BP1C-BP4C – SECTIONS & DETAILS
JW14060R-ME-009 : WASH WATER SUPPLY PUMPS – SECTIONS & DETAILS
JW14060R-ME-010 : SLUDGE SUPPLY PUMPS SECTIONS AND DETAILS

JW14060R-CE-001 : MCC BUILDING FOR BELT PRESS SET "A" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-002 : MCC BUILDING FOR BELT PRESS SET "A" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-003 : MCC BUILDING FOR BELT PRESS SET "C" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-004 : MCC BUILDING FOR BELT PRESS SET "C" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-005 : PUMP,SLUDGE VALVE BANK & POLYMER TANK CONCRETE BUND WALLS AND PLINTH SECTIONS & DETAILS (SHEET 1 OF 3)
JW14060R-CE-006 : CONCRETE-PUMP,SLUDGE VALVE BANK & POLYMER TANK BUND WALLS AND PLINTH – SECTIONS & DETAILS (SHEET 2 OF 3)
JW14060R-CE-007 : POLYMER SILO CONCRETE BUNG WALL – SECTIONS & DETAILS (SHEET 3 OF 3)
JW14060R-CE-008 : CRAWL BEAM – BP1A-BP4A LAYOUT,SECTIONS AND DETAILS (SHEET 1 OF 2)
JW14060R-CE-009 : CRAWL BEAM – BP1C-BP6C LAYOUT,SECTIONS AND DETAILS (SHEET 2 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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Johannesburg Water

17 HARRISON STREET
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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT-WASH WATER STRAINER FOR BP1A-6A SECTIONS AND PIPE SCHEDULE

DESIGN MANAGER
J. PRINSLOO
DATE 20/02/2020

SCALE
AS SHOWN

AMENDMENTS			
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.
JW NUMBER JW14060R-ME-008
CONSULTANT'S NUMBER H357555-ME-008
FILE No BWW1403

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03-FEB-2022
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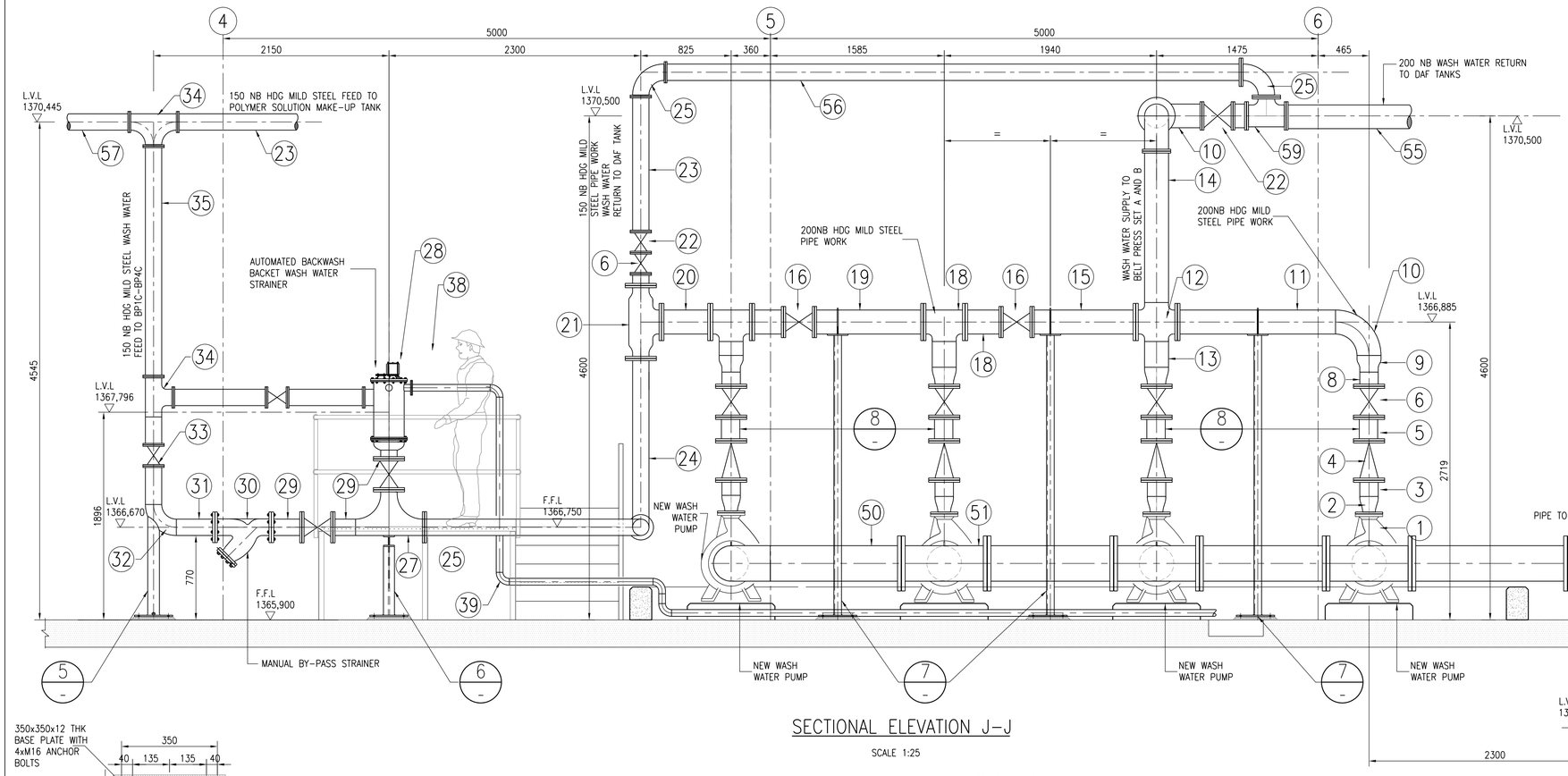
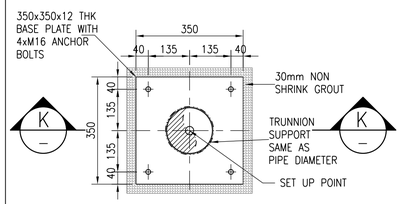
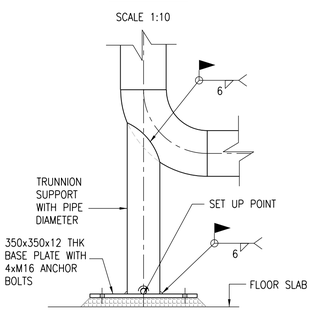


SECTIONAL ELEVATION J–J

SCALE 1:25



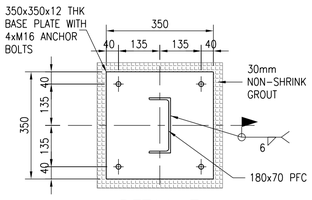
DETAIL 5



SCALE 1:10

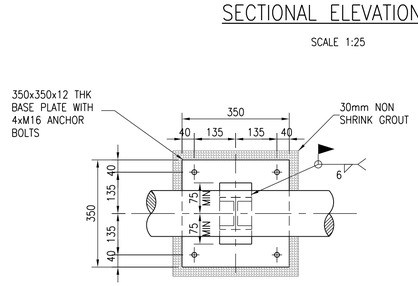
SECTIONAL ELEVATION K–K

SCALE 1:10



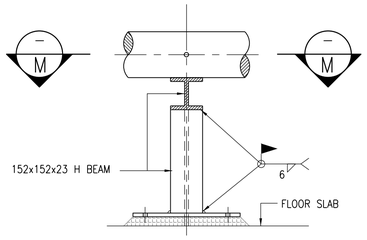
DETAIL 7

SCALE 1:10



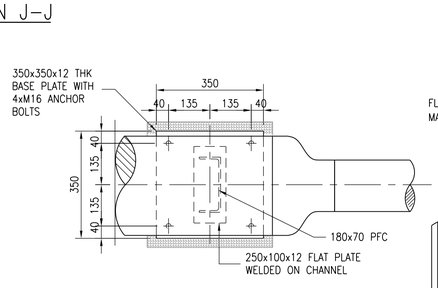
SECTIONAL PLAN M–M

SCALE 1:10



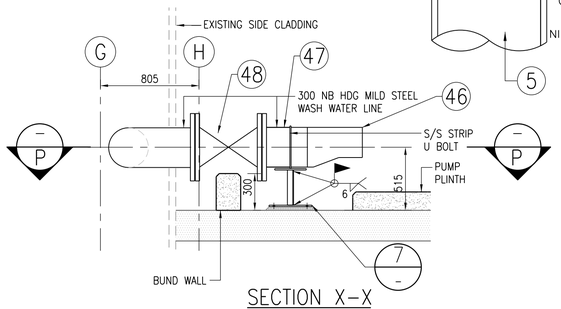
DETAIL 6

SCALE 1:10



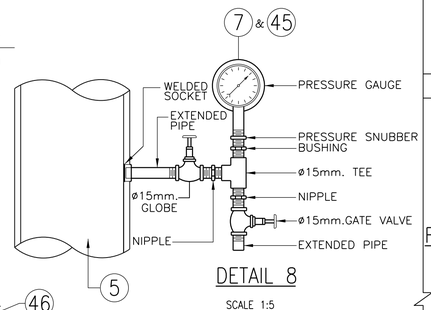
SECTIONAL VIEW P–P

SCALE 1:10



SECTION X–X

SCALE 1:25

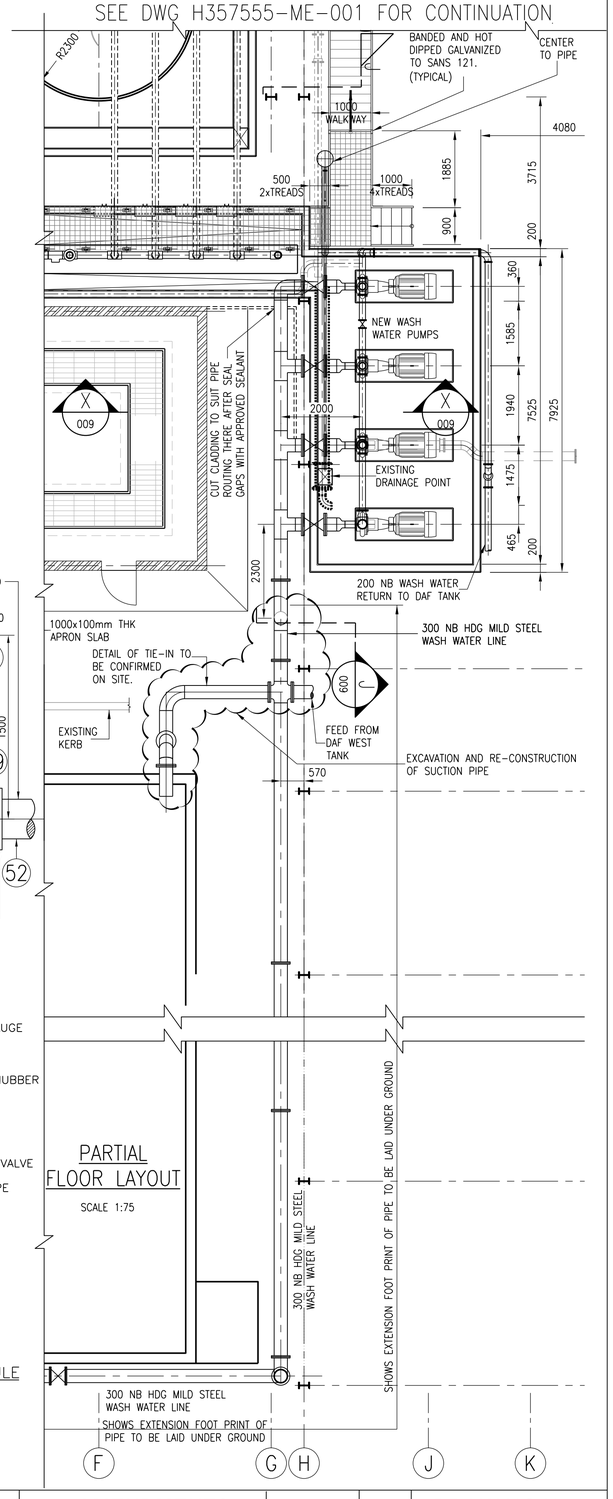


DETAIL 8

SCALE 1:5

FOR NOTES AND EQUIPMENTS SCHEDULE REFER TO DRAWING JW14060R–ME–008

SEE DWG H357555–ME–001 FOR CONTINUATION



DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
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SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT–WASH WATER SUPPLY PUMP & STRAINER FOR BP1C–BP4C SECTIONS & DETAILS

DESIGN MANAGER: J. PRINSLOO
DATE: 20/02/2020

SCALE: AS SHOWN

	AMENDMENTS	APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R–ME–009
CONSULTANT'S NUMBER
H357555–ME–009
FILE No
BWW1403

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03-FEB-2022
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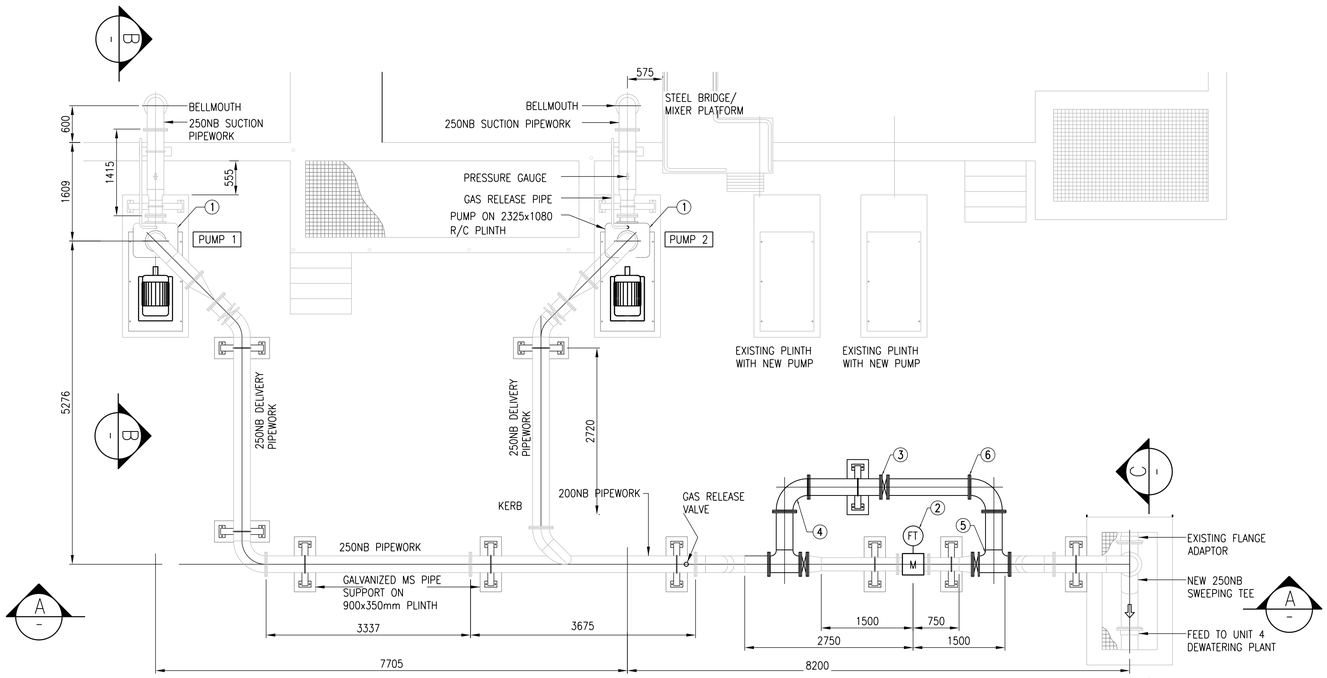
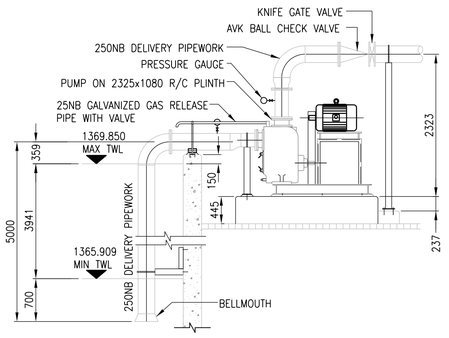


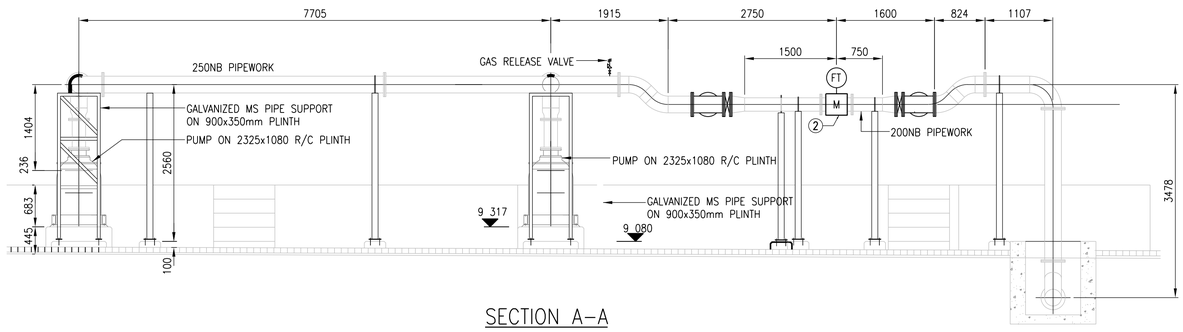
GENERAL LAYOUT

SCALE 1:50



SECTION B–B

SCALE 1:50



SECTION A–A

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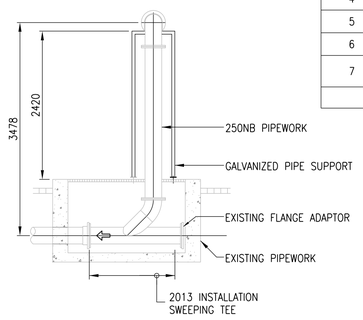

SECTION C–C

SCALE 1:50

GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. A CONTRACTOR OR SUB-CONTRACTOR SHALL CHECK THE NET LOAD OF THE BELT PRESS AND SEND TO THE ENGINEERING SERVICE MANAGER(EMS) FOR FOUNDATION LOADS DISTRIBUTION.
8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION,OR RELEVANT SABS 1200 SPECIFICATION.
10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSIONED AND DEMOLISHED FOR BUILDING CLEARANCE PRIOR TO INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ INCONJUCTION WITH ALL DRAWINGS IN JW14060R-GEN-001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS MUST MATCH PIPEMATERIAL UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

SLUDGE SUPPLY EQUIPMENT AND PIPEWORK SCHEDULE FOR TENDER PURPOSE

ITEM NO.	SPEC. NO.	DIA. (MM)	QTY	SIZE (mm)	DESCRIPTION
1	M18	–	2	–	SLUDGE TRANSFER PUMP WITH DRIVE MOTOR @ 396 m³/hr AT 20m HEAD.
2	VOLUME 8	200	1	–	COMMON VOLUME MAGNETIC FLOWMETER
3	M21	250	3	PN 10	FLANGED KNIFE GATE VALVE
4	ASME B16.9	250	2	381 C/F	304L STAINLESS STEEL 90° LONG RADIUS BEND
5	ASME B16.9	250	2	216 C/F	304L STAINLESS STEEL EQUAL TEE
6	SANS 1123	250	18	1000 / 3	304L STAINLESS STEEL FLANGES
7	ASME B36.19	250	1	3800	304L STAINLESS STEEL SHCEDULE 10S PIPE

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED Pr. Eng. No.	JF. PRINSLOO 960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT – SLUDGE SUPPLY PUMPS SECTIONS & DETAILS

DESIGN MANAGER J. PRINSLOO
DATE 20/02/2020

SCALE AS SHOWN

AMENDMENTS		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.
JW NUMBER JW14060R-ME-010
CONSULTANT'S NUMBER H357555-ME-010
FILE No BWW1403

09-21
jdc pwservice
03-FEB-2022
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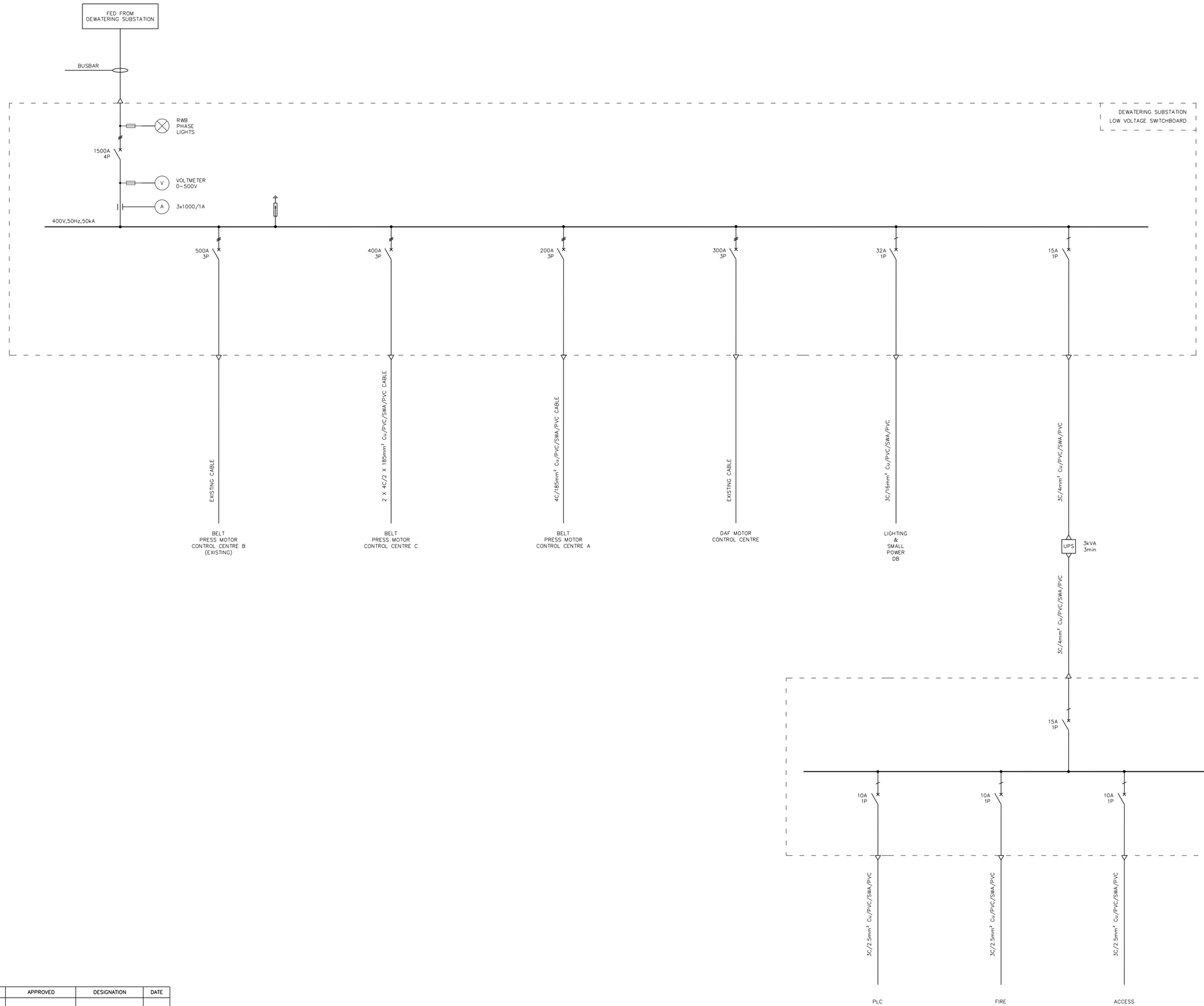

LEGEND:

- WITHDRAWABLE MV CIRCUIT BREAKER
- LV CIRCUIT BREAKER
- EARTH SWITCH
- INTER LOCK
- EARTH
- AMP METER
- VOLTMETER
- VOLTMETER SELECTOR SWITCH
- FUSE
- UPS — UNINTERUPPTED POWER SUPPLY
- PFC — POWER FACTOR CORRECTION
- DOL MOTOR STARTER
- S/S — SOFT STARTER
- STAR/DELTA STARTER
- VARIABLE SPEED DRIVE
- 3 PHASE MOTOR
- SURGE ARRESTOR
- MOTOR DRIVE HEATER
- THERMISTOR
- E/STOP — EMERGENCY STOP
- LCP — LOCAL CONTROL PANEL
- BCP — BELT PRESS CONTROL PANEL
- BCP/I — EQUIPMENT ASSOCIATED WITH BELT PRESS & INDICATION ON BELT PRESS CONTROL PANEL.
- ISOLATOR
- CABLE GLAND

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER WORKS

DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
DEWATERING SUBSTATION LV SWITCHBOARD
SINGLE LINE DIAGRAM – SHEET 1 OF 1

DESIGN MANAGER	SCALE
J PRINSLOO	NTS
DATE	

	AMENDMENTS	APPROVED	DATE
T02	ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER
JW14060R-ME-011

CONSULTANT'S NUMBER
H357555-ME-011

FILE No
BWW 1403

Approved for Bid

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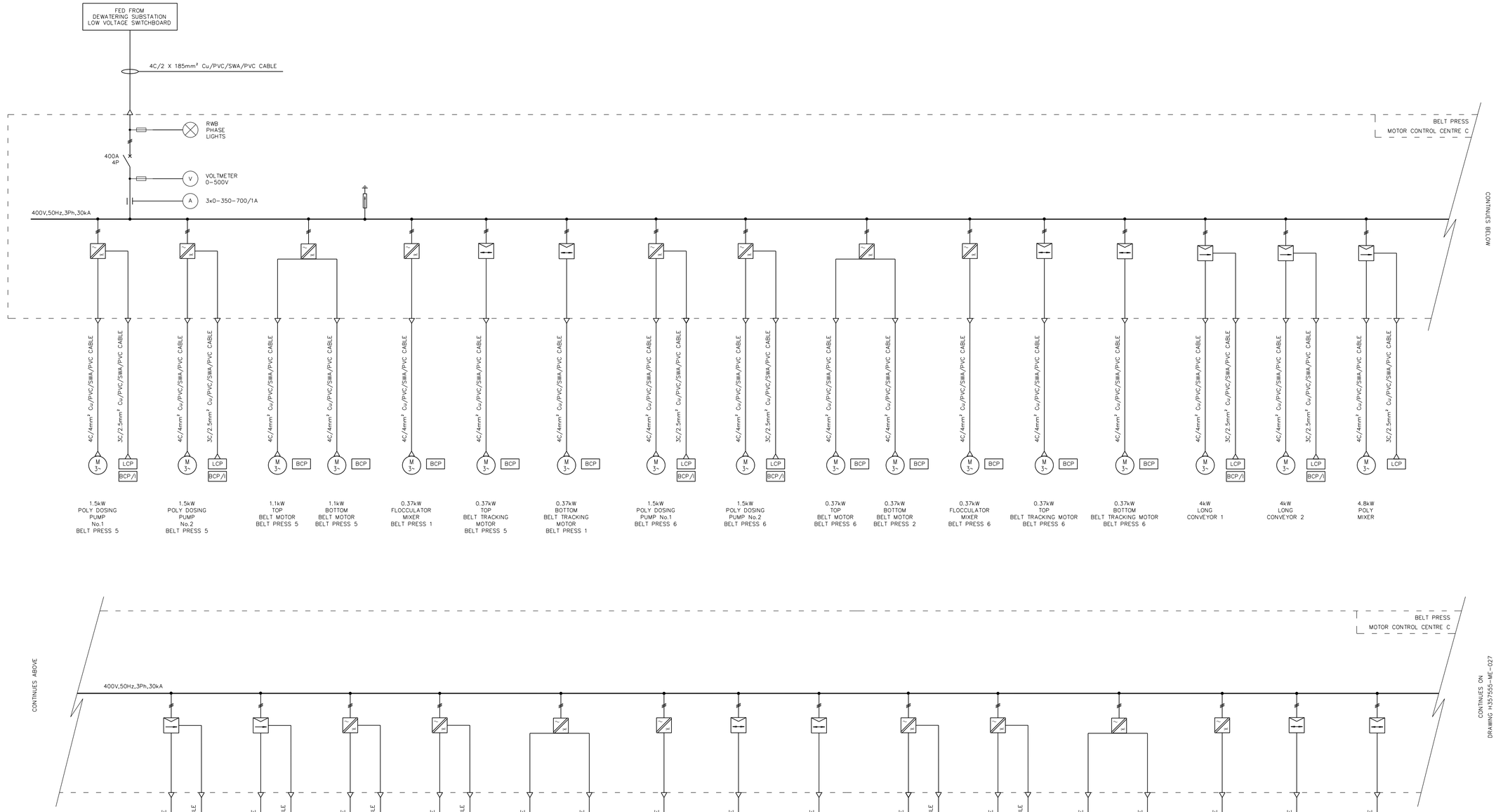

LEGEND:

- WITHDRAWABLE MV CIRCUIT BREAKER
- LV CIRCUIT BREAKER
- EARTH SWITCH
- INTER LOCK
- EARTH
- AMP METER
- VOLTMETER
- VOLTMETER SELECTOR SWITCH
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- FORWARD/REVERSE STARTER
- S/S — SOFT STARTER
- STAR/DELTA STARTER
- VARIABLE SPEED DRIVE
- 3 PHASE MOTOR
- SURGE ARRESTOR
- MOTOR DRIVE HEATER
- THERMISTOR
- E/STOP — EMERGENCY STOP
- LCP — LOCAL CONTROL PANEL
- BCP — BELT PRESS CONTROL PANEL
- BCP/I — EQUIPMENT ASSOCIATED WITH BELT PRESS & INDICATION ON BELT PRESS CONTROL PANEL.
- ISOLATOR
- CABLE GLAND

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

BELT PRESS MOTOR CONTROL CENTER C

SINGLE LINE DIAGRAM – SHEET 1 OF 2

DESIGN MANAGER	SCALE
J PRINSLOO	NTS
DATE	

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER
JW14060R-ME-012

CONSULTANT'S NUMBER
H357555-ME-012

FILE No
BW1403

Approved for Bid

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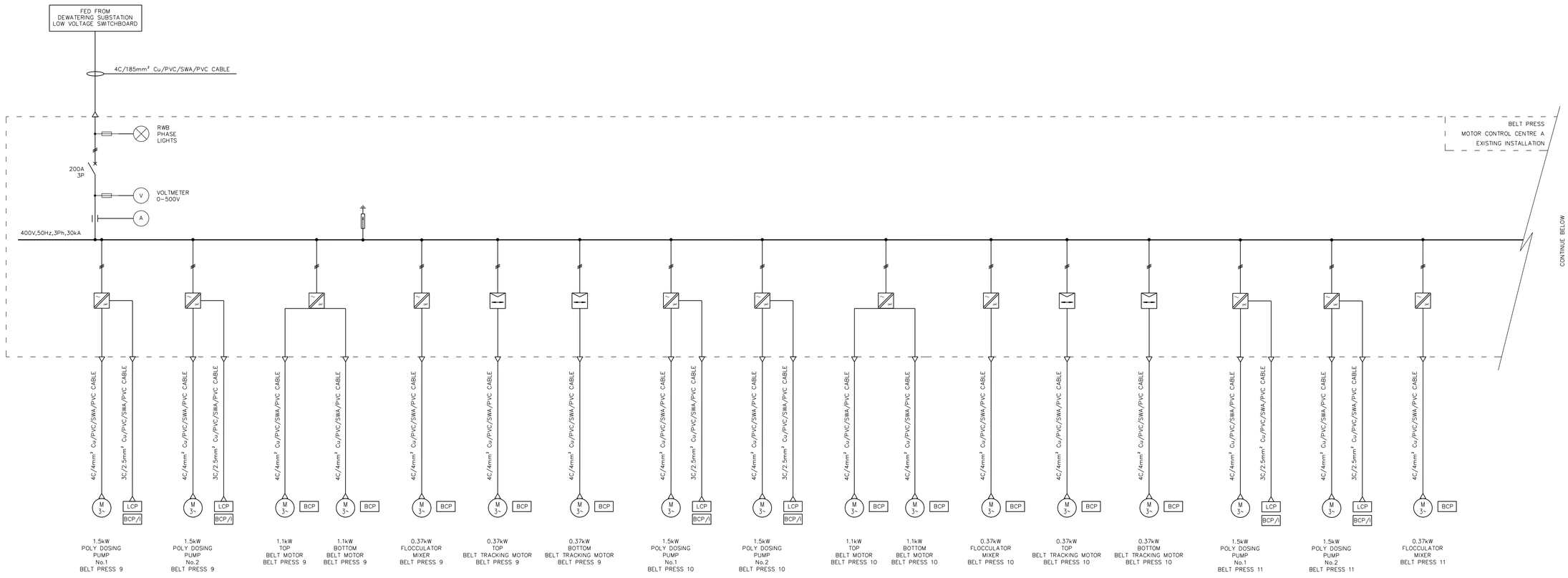

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

BELT PRESS MOTOR CONTROL CENTER A

SINGLE LINE DIAGRAM – SHEET 1 OF 2

DESIGN MANAGER	SCALE
J.PRINSLOO	NTS
DATE	

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR TENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER
JW14060R-ME-013

CONSULTANT'S NUMBER
H357555-ME-013

FILE No
BW1403

Approved for Bid

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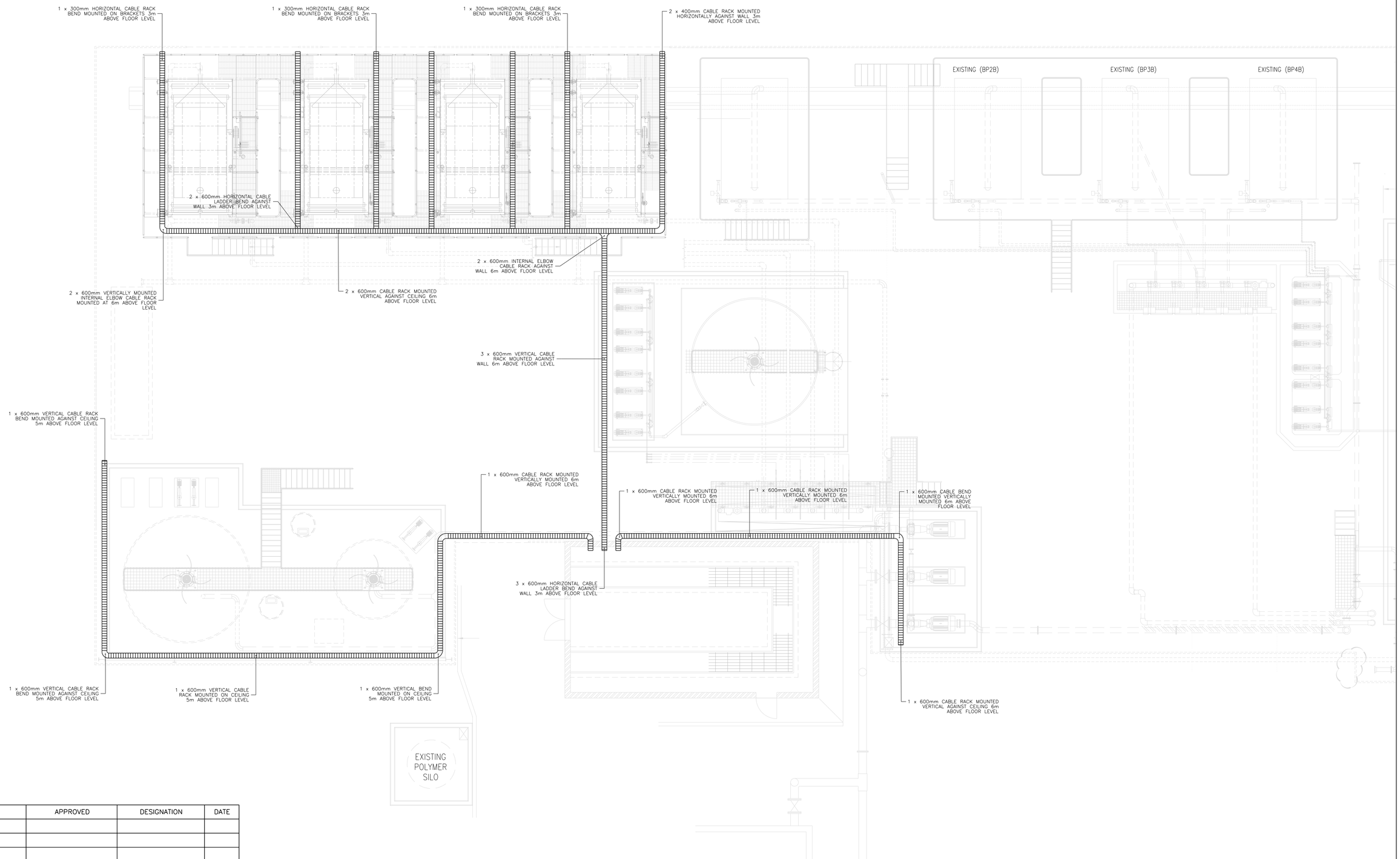

DEPARTMENT	APPROVED	DESIGNATION	DATE
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CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MOHAPI
DRAWN	M.MOHAPI
CHECKED	D.VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

NEW BELT PRESSES CABLES RACKING LAYOUT - AREA 1

DESIGN MANAGER: J. PRINSLOO

DATE: 21/02/2020

SCALE: AS SHOWN

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	D.VISSER	01/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-014

CONSULTANT'S NUMBER
H357555-ME-014

FILE No
BWW1403

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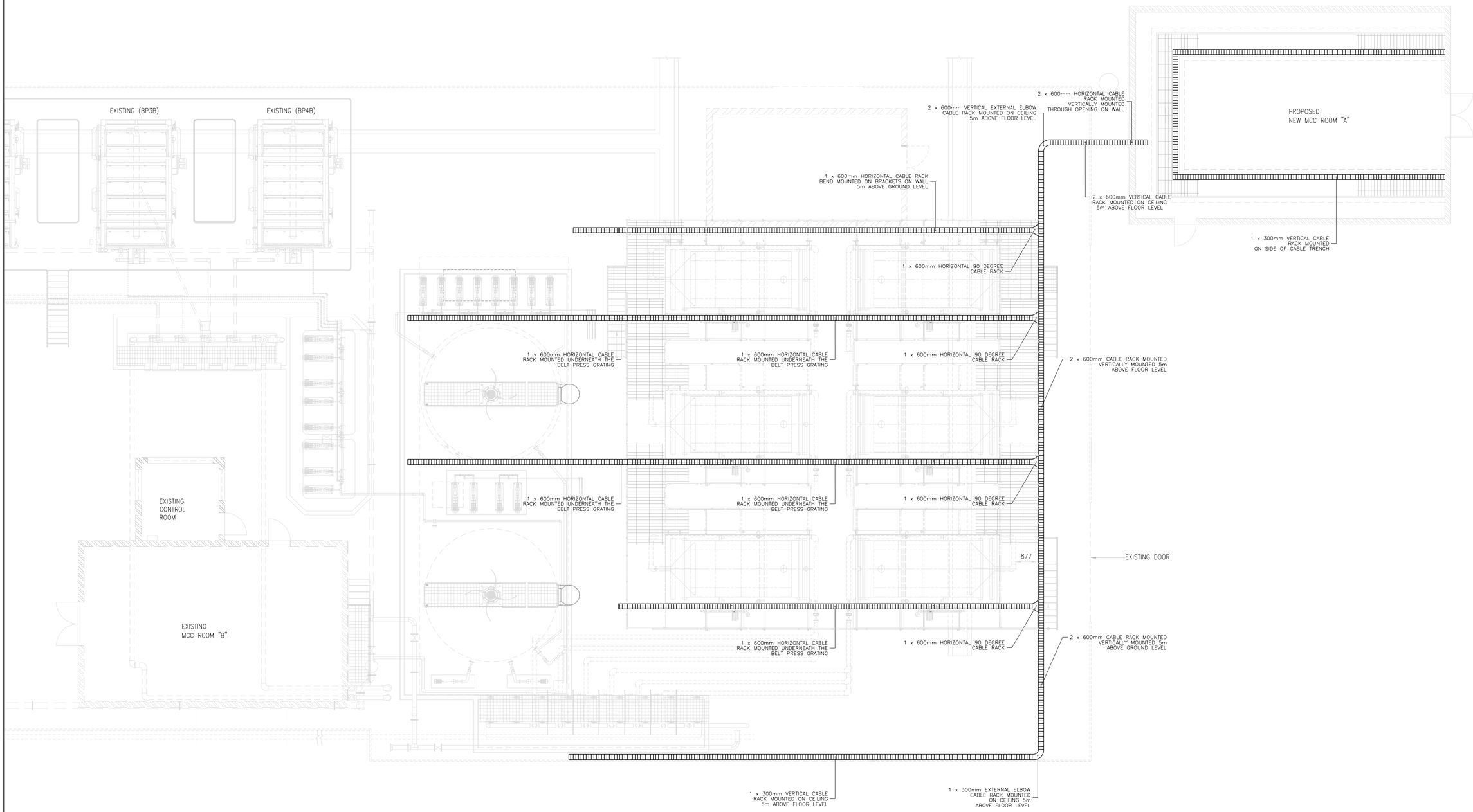

CABLE RACKING LAYOUT

SCALE 1:75

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MOHAPI
DRAWN	M.MOHAPI
CHECKED	D.VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

NEW BELT PRESSES CABLES RACKING LAYOUT - AREA 2

DESIGN MANAGER

J. PRINSLOO

DATE 21/02/2020

SCALE

AS SHOWN

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	D.VISSER	01/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-015

CONSULTANT'S NUMBER
H357555-ME-015

FILE No
BWW1403

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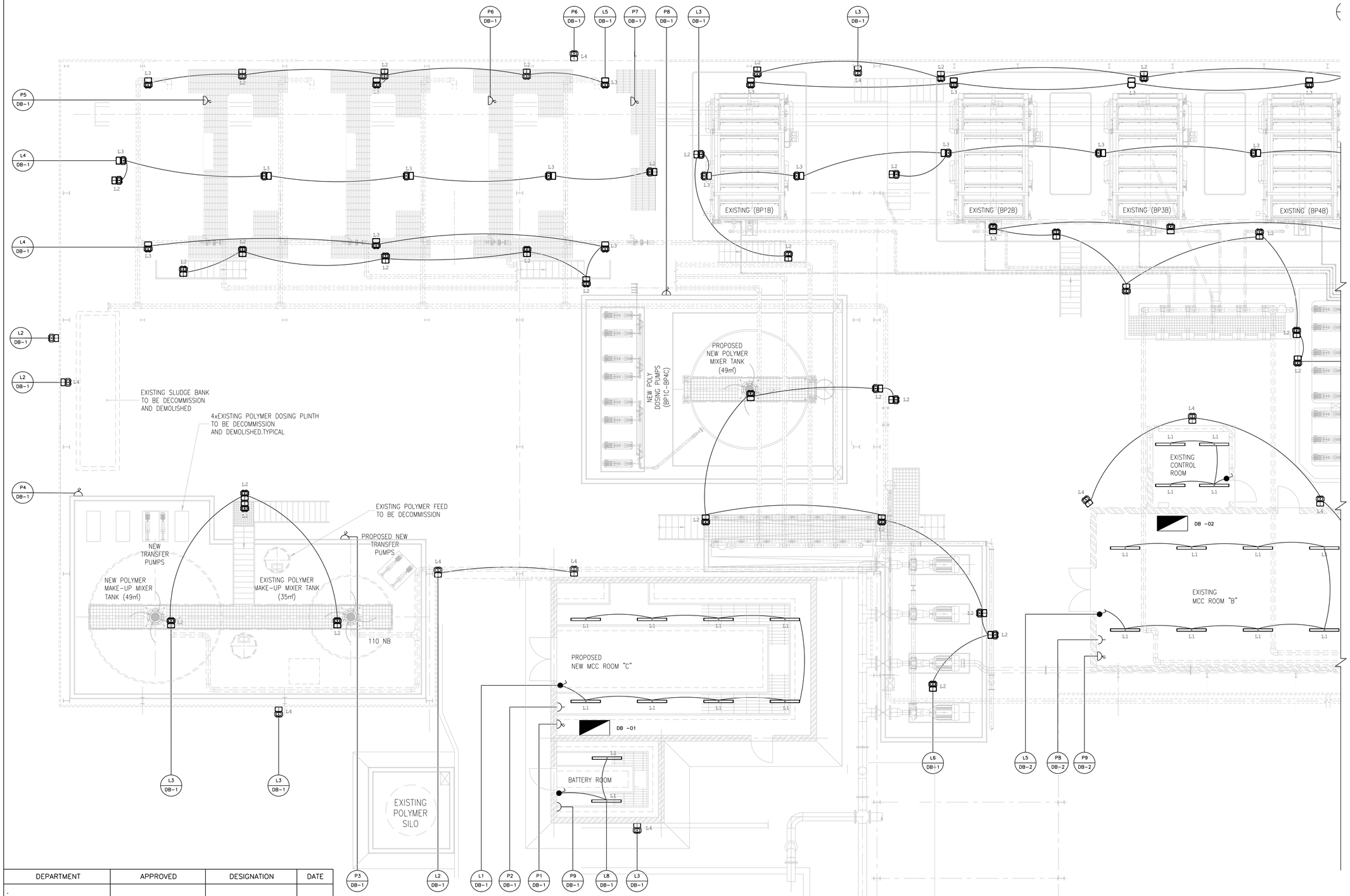

LEGEND

- L1 — BEKA-SCHRÉDER VLN 30W, L1 – TYPE, CEILING MOUNTED, IP65
- L2 — BEKA-SCHRÉDER LEDNova-Mini 16LED/37w OPTIC 5068, L2 – TYPE, MOUNTING HEIGHT: 4.03m, IP66
- L3 — BEKA-SCHRÉDER LEDNova-Mini 16LED/37w OPTIC 5068 UNDER PLATFORM MO, L3 – TYPE, MOUNTING HEIGHT: 1.895m, IP66
- L4 — BEKA-SCHRÉDER LEDNova-Mini 16LED/37w OPTIC 5068, L4 – TYPE, MOUNTING HEIGHT: 2.1m, IP66
- DISTRIBUTION BOARD
- 3 PHASE 4 POLE 32A SWITCHED SOCKET OUTLET, IP65 MOUNTED @ 1000mm A.F.F.L
- 16A SINGLE INDUSTRIAL TYPE SWITCHED SOCKET OUTLET MOUNTED @ 1000mm A.F.F.L
- 16A SINGLE LEVEL SWITCH

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MOHAPI
DRAWN	M.MOHAPI
CHECKED	D.VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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2107

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CITY OF JOHANNESBURG

01

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

BUILDING SMALL POWER AND LAYOUT – AREA 1

DESIGN MANAGER: J. PRINSLOO

DATE 21/02/2020

SCALE: AS SHOWN

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/2022

DRAWING No.

JW NUMBER JW14060R-ME-016

CONSULTANT'S NUMBER H357555-ME-016

FILE No BWW1403

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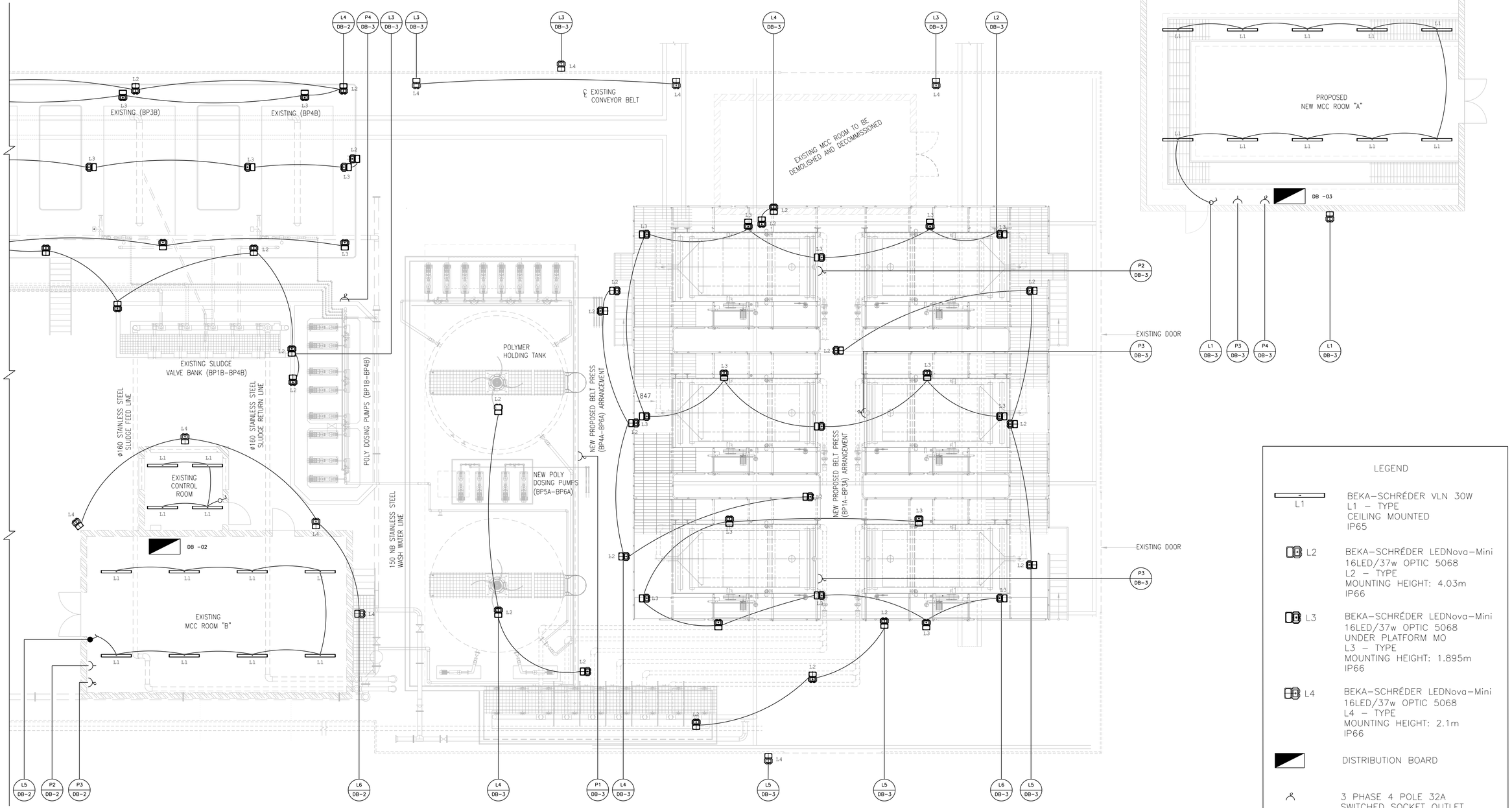

LEGEND

L1	BEKA–SCHRÉDER VLN 30W L1 – TYPE CEILING MOUNTED IP65
L2	BEKA–SCHRÉDER LEDNova–Mini 16LED/37w OPTIC 5068 L2 – TYPE MOUNTING HEIGHT: 4.03m IP66
L3	BEKA–SCHRÉDER LEDNova–Mini 16LED/37w OPTIC 5068 UNDER PLATFORM MO L3 – TYPE MOUNTING HEIGHT: 1.895m IP66
L4	BEKA–SCHRÉDER LEDNova–Mini 16LED/37w OPTIC 5068 L4 – TYPE MOUNTING HEIGHT: 2.1m IP66
	DISTRIBUTION BOARD
	3 PHASE 4 POLE 32A SWITCHED SOCKET OUTLET. IP65 MOUNTED @ 1000mm A.F.F.L
	16A SINGLE INDUSTRIAL TYPE SWITCHED SOCKET OUTLET MOUNTED @ 1000mm A.F.F.L
	16A SINGLE LEVEL SWITCH

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

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DRAWN	M.MOHAPI
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SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES
BUILDING SMALL POWER AND LIGHT LAYOUT – AREA 2

DESIGN MANAGER J. PRINSLOO

DATE 20/02/2020

SCALE AS SHOWN

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	D.VISSER	01/02/2022

DRAWING No.

JW NUMBER JW14060R-ME-017

CONSULTANT'S NUMBER H357555-ME-017

FILE No BWW1403

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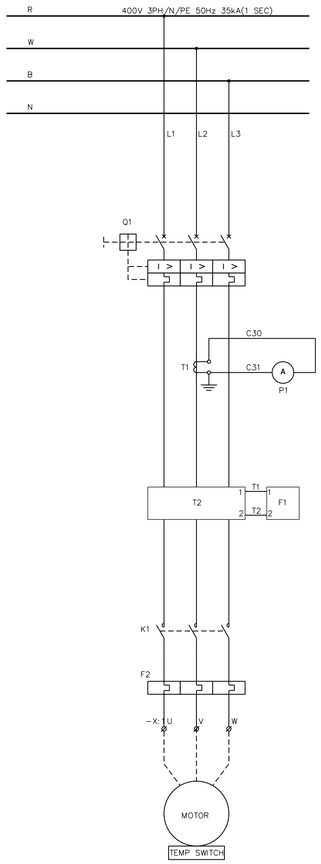
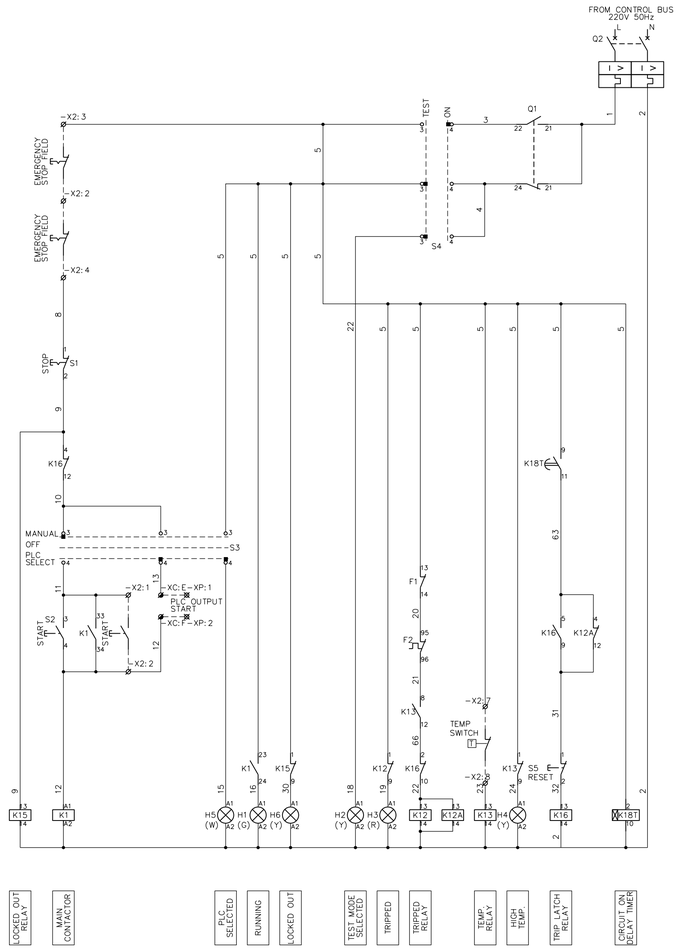
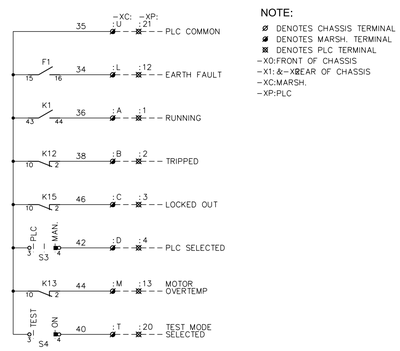
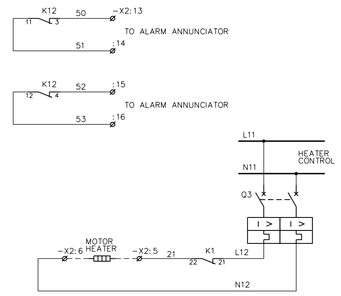






NOTE:

- ⌀ DENOTES CHASSIS TERMINAL
- ⌀ DENOTES MARSH. TERMINAL
- ⊠ DENOTES PLC TERMINAL
- -X0:FRONT OF CHASSIS
- -X1: & -X2:REAR OF CHASSIS
- -XC:MARSH.
- -XP:PLC



DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS

REPLACEMENT AND ASSOCIATED ANCILLARIES

TYPICAL D.O.L SCHEMATIC DIAGRAM

SHEET 1 OF 1

DESIGN MANAGER: J.PRINSLOO

DATE:

SCALE: NTS

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER: JW14060R-ME-018

CONSULTANT'S NUMBER: H357555-ME-018

FILE No: BWW1403

Approved for Bid

dc_connection
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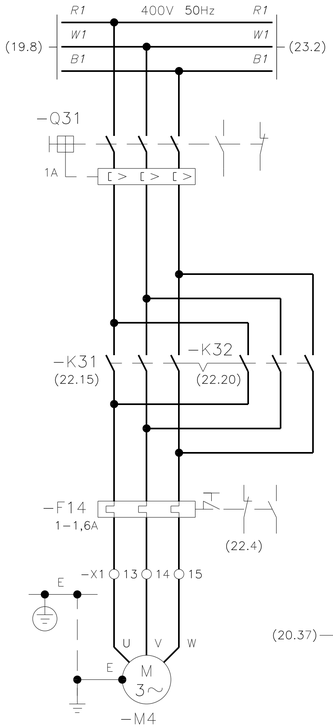
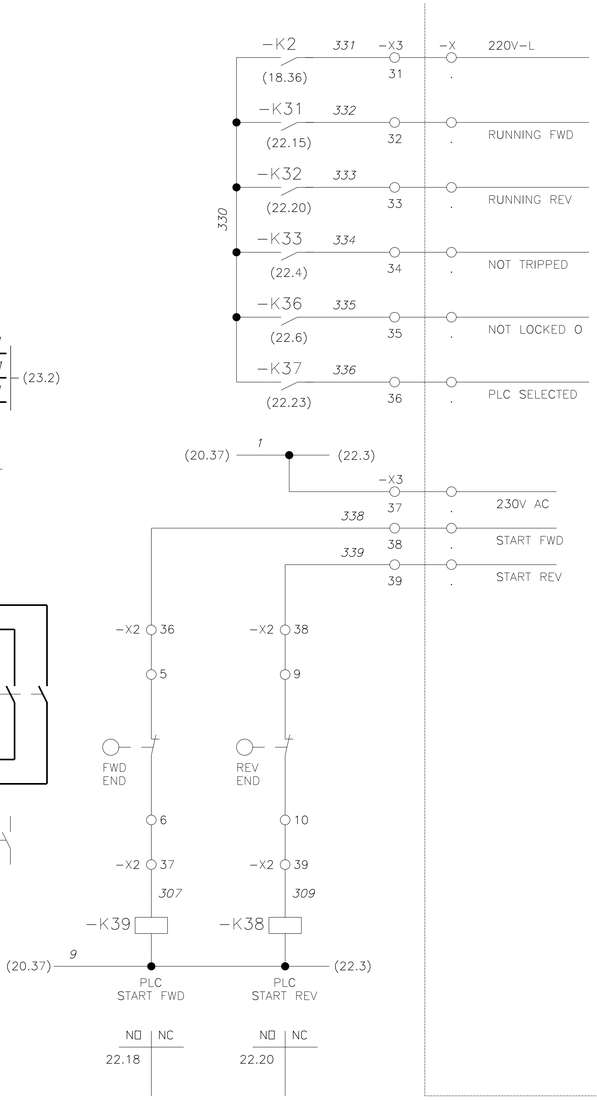
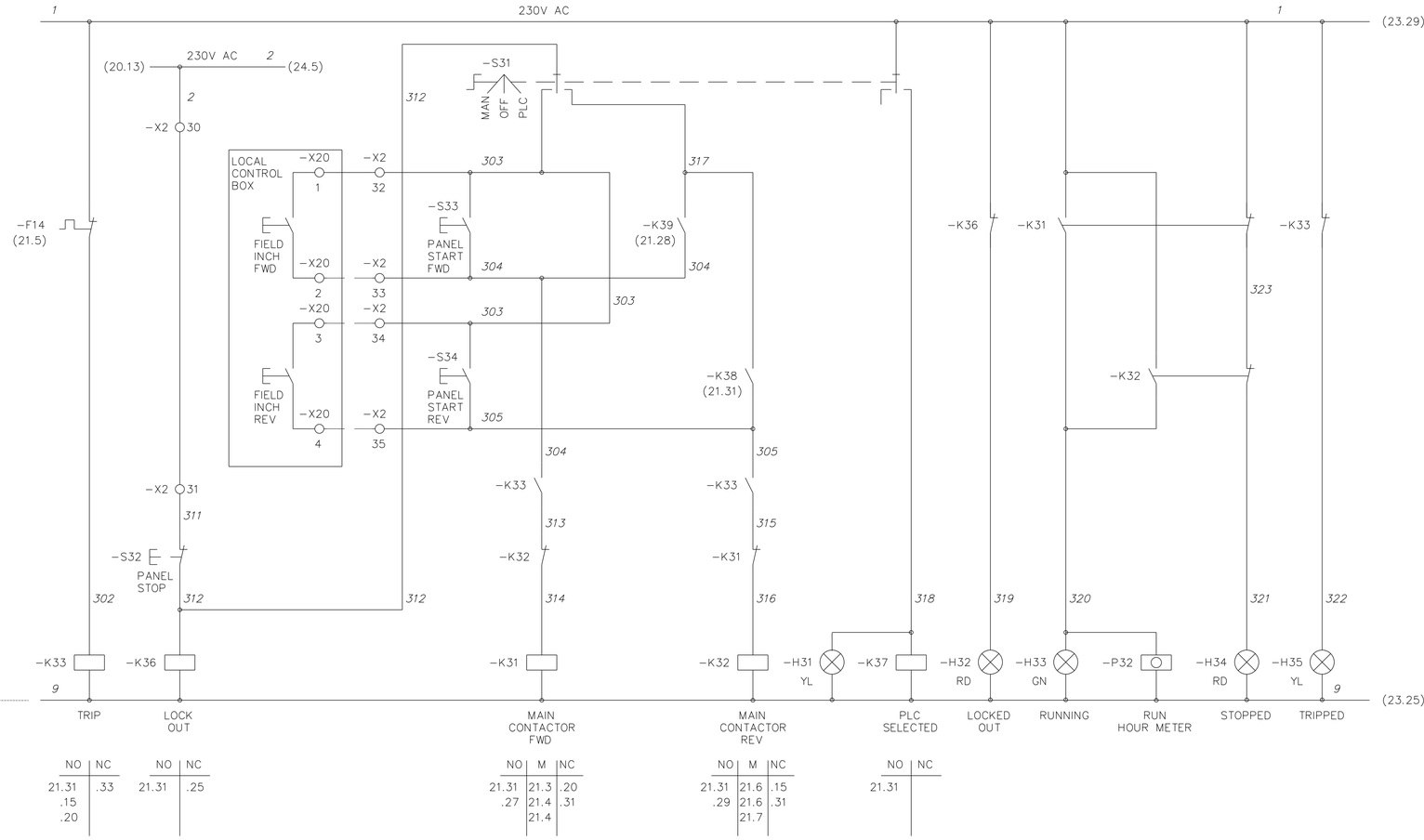
PLC PANEL







DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

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MARSHALLTOWN
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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
TYPICAL D.O.L FORWARD/ REVERSE SCHEMATIC DIAGRAM
SHEET 1 OF 1

DESIGN MANAGER: J.PRINSLOO
DATE:

SCALE: NTS

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER: JW14060R-ME-019
CONSULTANT'S NUMBER: H357555-ME-019
FILE No: BWW1403

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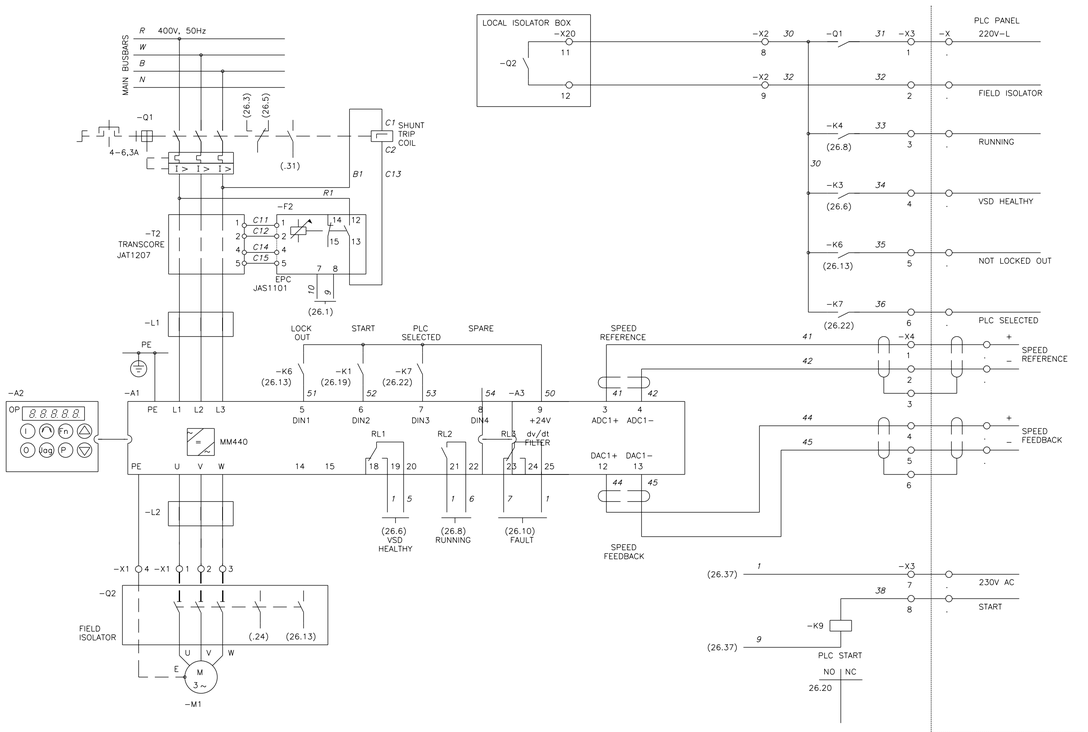
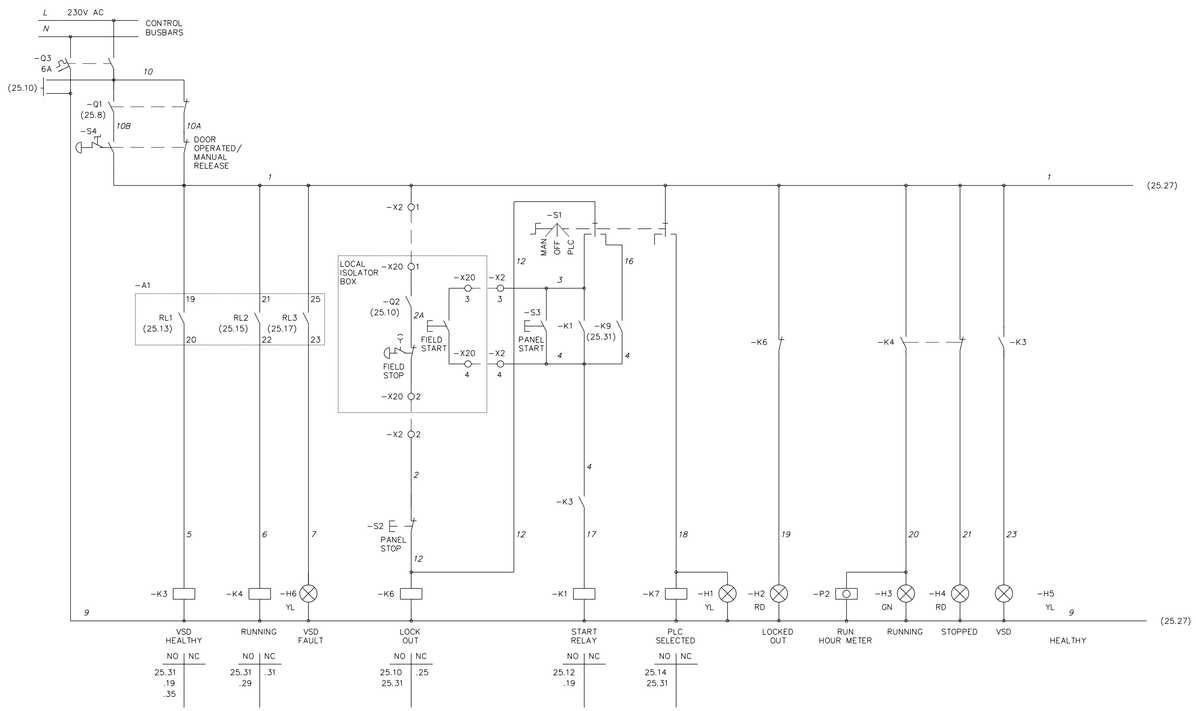
Approved for Bid





DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED Pr. Eng. No.	JF PRINSLOO 960121 2022-02-03
DATE	

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

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FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES

TYPICAL VSD SCHEMATIC DIAGRAM

SHEET 1 OF 1

DESIGN MANAGER: JJPRINSLOO

DATE:

SCALE: NTS

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER: JW14060R-ME-020

CONSULTANT'S NUMBER: H357555-ME-020

FILE No: BWW1403

Approved for Bid

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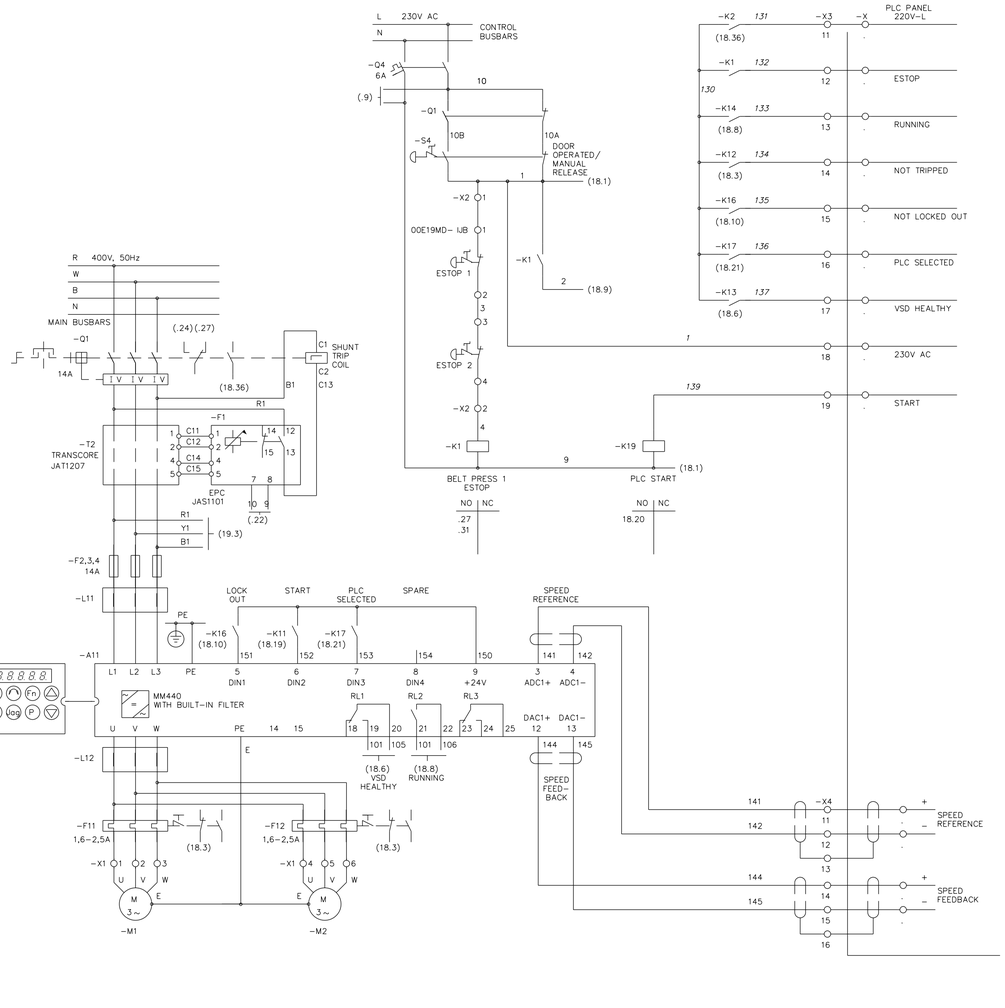

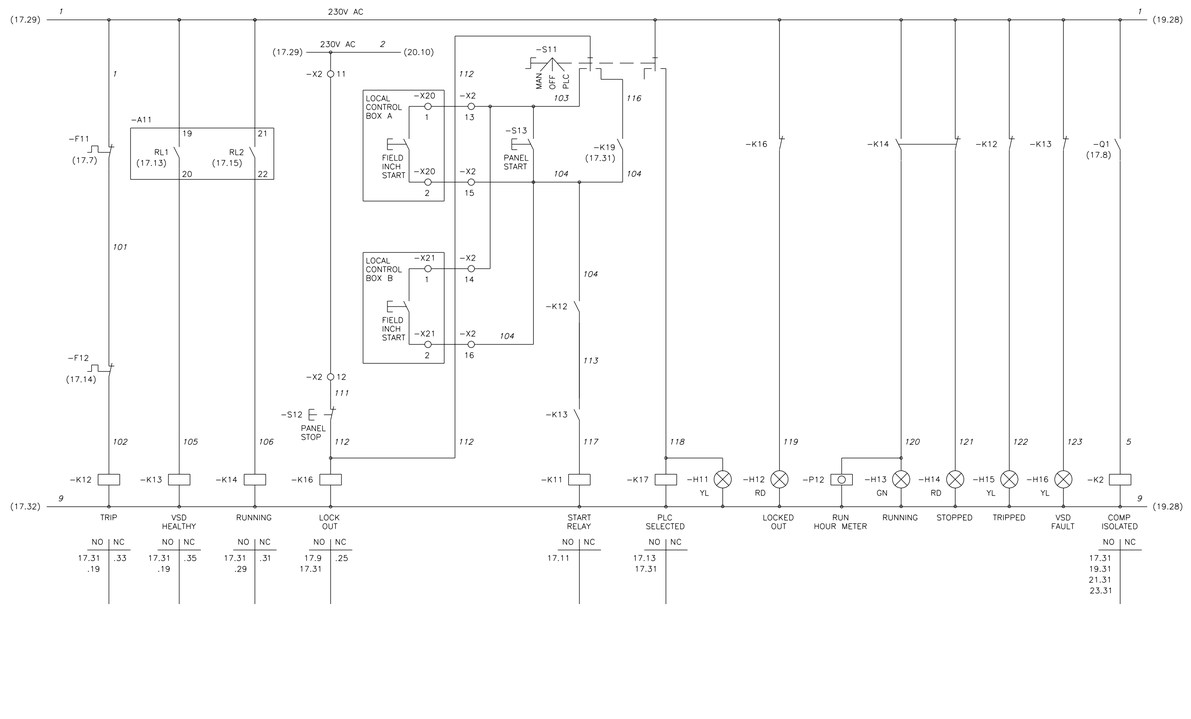

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED Pr. Eng. No.	JF. PRINSLOO 960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

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NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
TYPICAL VSD BELT DRIVES SCHEMATIC DIAGRAM
SHEET 1 OF 1

DESIGN MANAGER	SCALE
J.PRINSLOO	NTS
DATE	

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.	
JW NUMBER	JW14060R-ME-021
CONSULTANT'S NUMBER	H357555-ME-021
FILE No	BWW1403

Approved for Bid

DC: prinsloo
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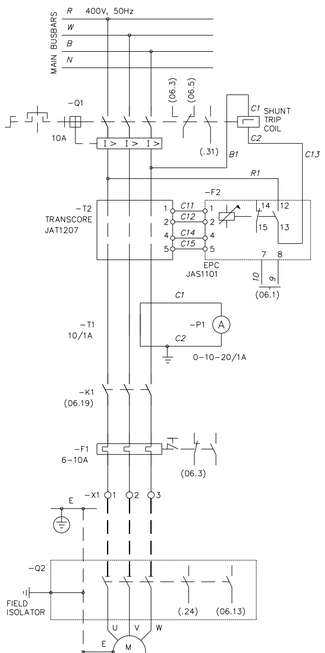

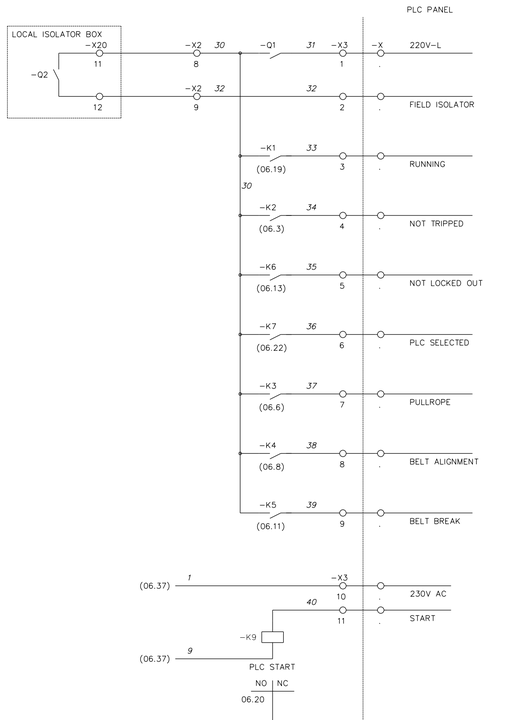

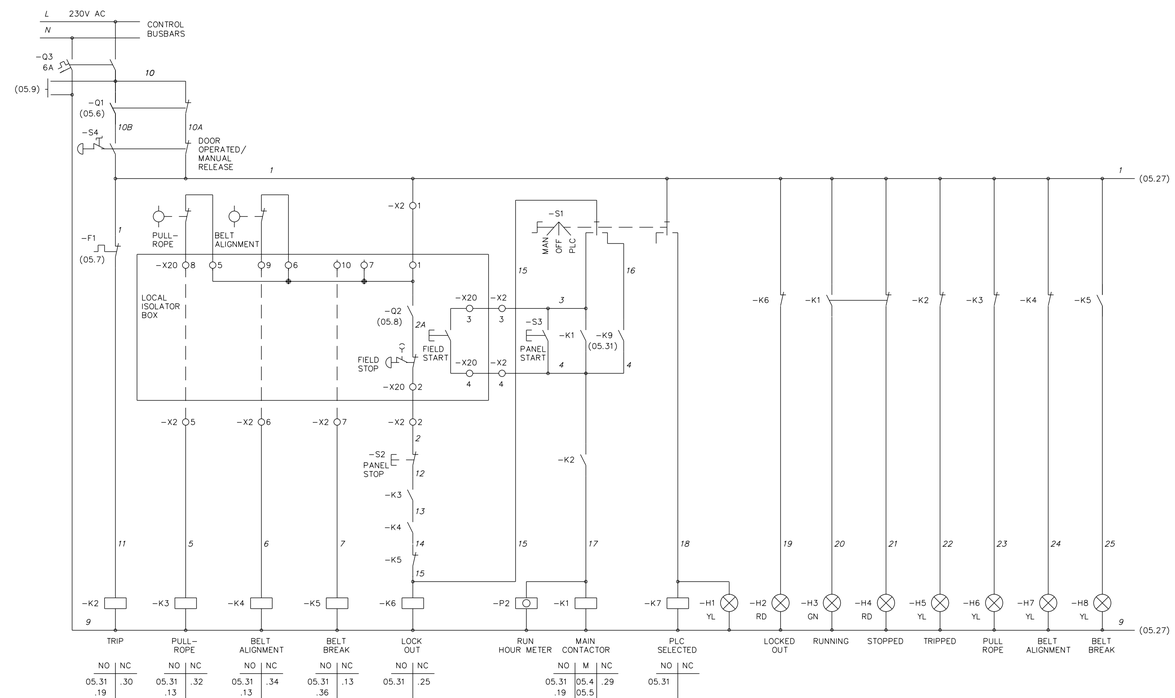

DEPARTMENT	APPROVED	DESIGNATION	DATE
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CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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Johannesburg Water

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2107

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES

TYPICAL SCHEMATIC DIAGRAM CONVEYOR

SHEET 1 OF 1

DESIGN MANAGER: J.PRINSLOO

DATE:

SCALE: NTS

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER: JW14060R-ME-022

CONSULTANT'S NUMBER: H357555-ME-022

FILE No: BWW1403

Approved for Bid

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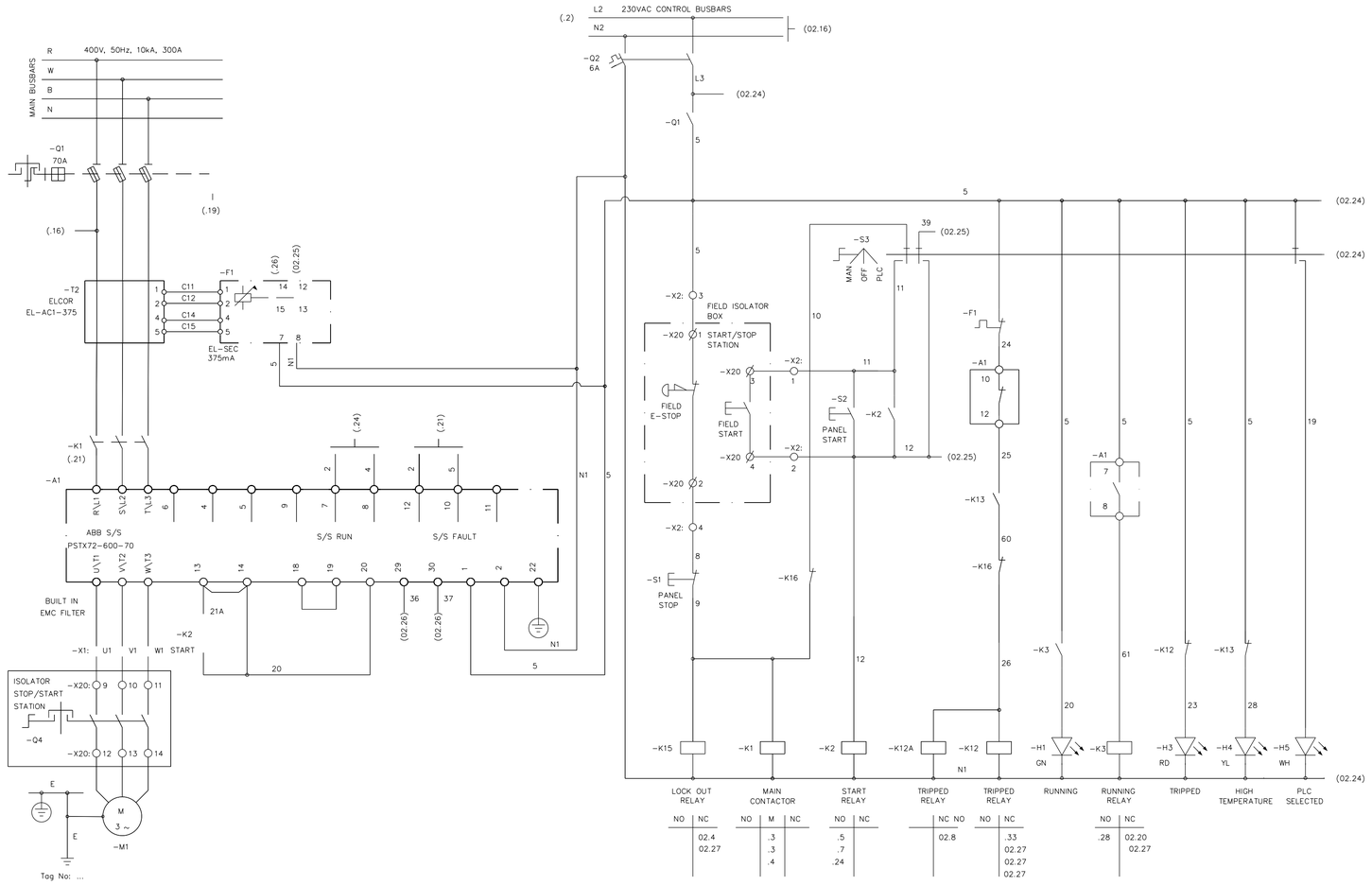

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

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MARSHALLTOWN
2107

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FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
TYPICAL SOFT STARTER SCHEMATIC DIAGRAM
SHEET 1 OF 1

DESIGN MANAGER J.PRINSLOO

DATE

SCALE NTS

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER
JW14060R-ME-023

CONSULTANT'S NUMBER
H357555-ME-023

FILE No
BWW1403

Approved for Bid

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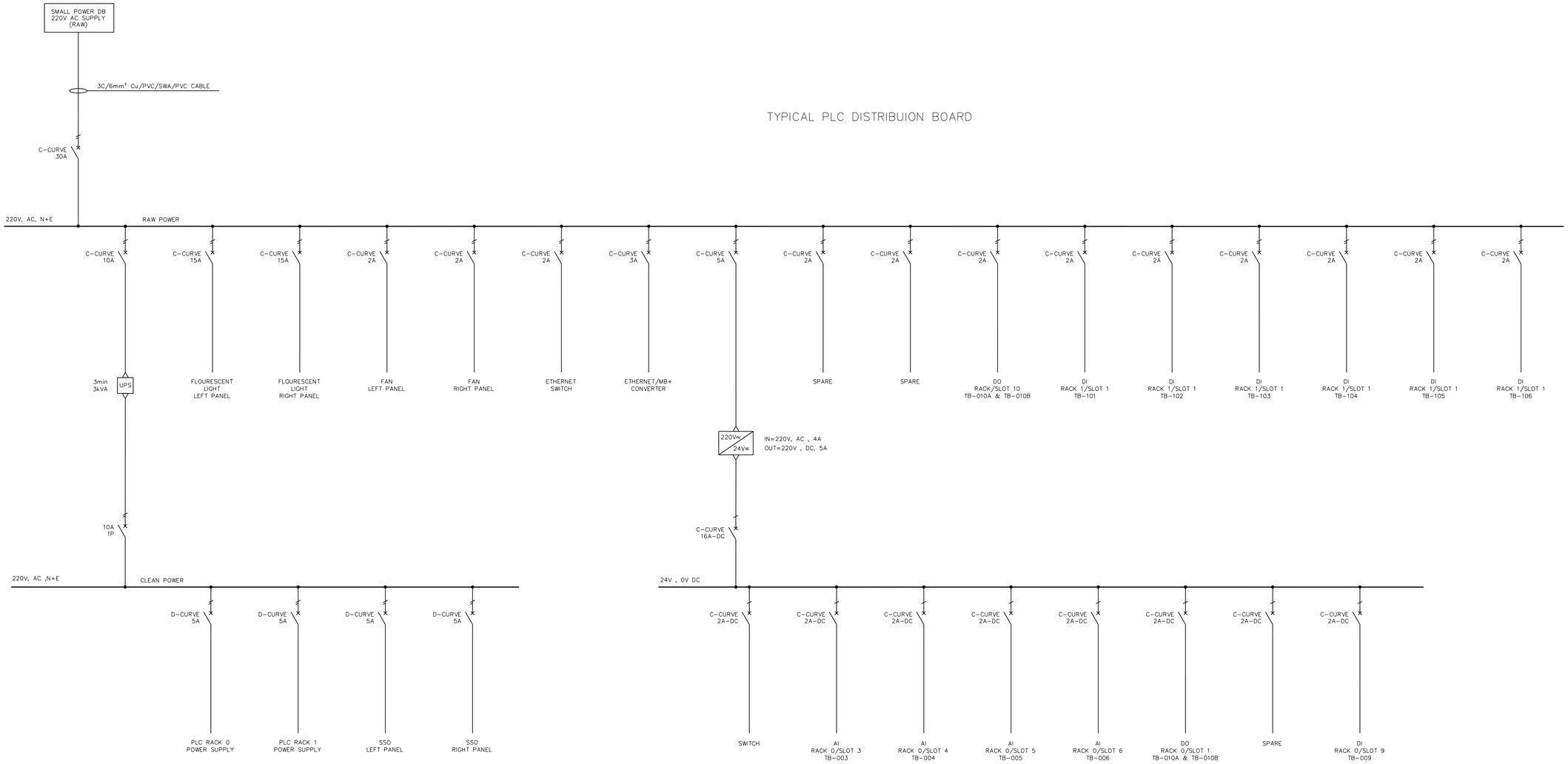
TYPICAL PLC DISTRIBUION BOARD



LEGEND:

- WITHDRAWABLE MEDIUM VOLTAGE CIRCUIT BREAKER
- LV CIRCUIT BREAKER
- EARTH SWITCH
- INTER LOCK
- EARTH
- AMP METER
- VOLTMETER
- VOLTMETER SELECTOR SWITCH
- FUSE
- UNINTERUPPTED POWER SUPPLY
- POWER FACTOR CORRECTION
- DOL MOTOR STARTER
- SOFT STARTER
- STAR/DELTA STARTER
- VARIABLE SPEED DRIVE
- 3 PHASE MOTOR
- SURGE ARRESTOR
- MOTOR DRIVE HEATER
- THERMISTOR
- EMERGENCY STOP
- LOCAL CONTROL PANEL
- ISOLATOR
- CABLE GLAND

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400

FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
SINGLE LINE DIAGRAM TYPICAL PLC DISTRIBUTION BOARD
SHEET 1 OF 1

DESIGN MANAGER	SCALE
J.PRINSLOO	NTS
DATE	

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER
JW14060R-ME-024

CONSULTANT'S NUMBER
H357555-ME-024

FILE No
BW1403

Approved for Bid

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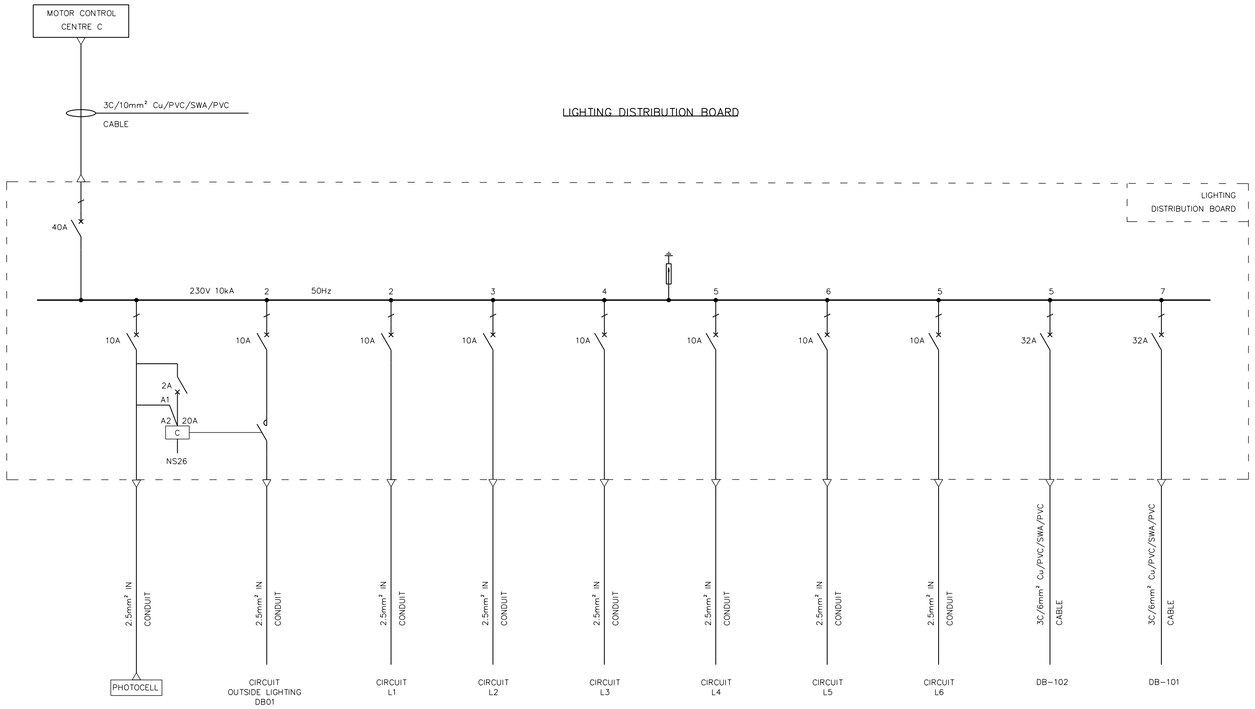

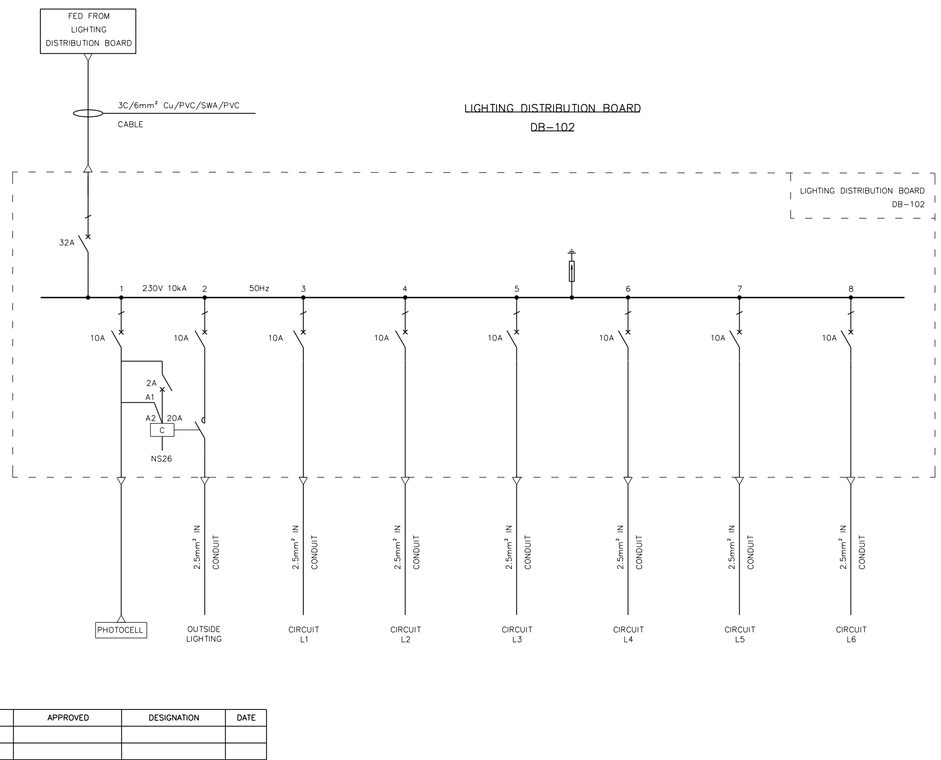

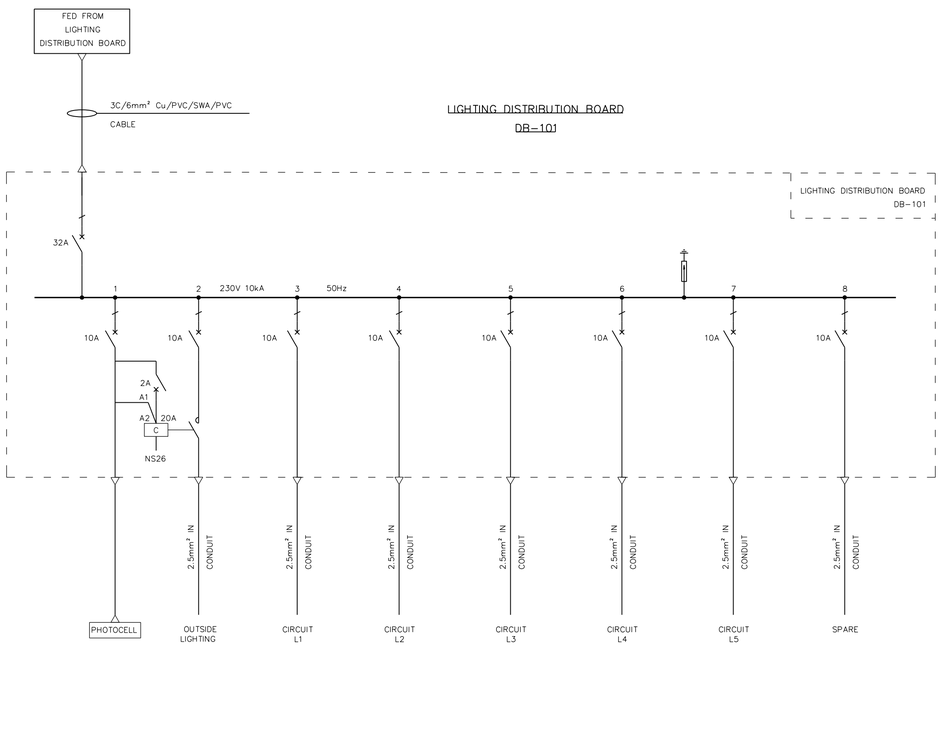

LEGEND:

- WITHDRAWABLE MV CIRCUIT BREAKER
- LV CIRCUIT BREAKER
- EARTH SWITCH
- INTER LOCK
- EARTH
- AMP METER
- VOLTMETER
- VOLTMETER SELECTOR SWITCH
- WELDING SOCKET 4 PIN, 63A, 400V
- FUSE
- UPS — UNINTERUPPTED POWER SUPPLY
- PFC — POWER FACTOR CORRECTION
- DOL MOTOR STARTER
- REVERSE/FORWARD STARTER
- S/S — SOFT STARTER
- STAR/DELTA STARTER
- VARIABLE SPEED DRIVE
- 3 PHASE MOTOR
- SURGE ARRESTOR
- MOTOR DRIVE HEATER
- THERMISTOR
- E/STOP — EMERGENCY STOP
- LCP — LOCAL CONTROL PANEL
- BCP — BELT PRESS CONTROL PANEL
- BCP/I — EQUIPMENT ASSOCIATED WITH BELT PRESS & INDICATION ON BELT PRESS CONTROL PANEL.
- ISOLATOR
- CABLE GLAND

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED Pr. Eng. No.	JF PRINSLOO 960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
LIGHTING DISTRIBUTION
SINGLE LINE DIAGRAM

DESIGN MANAGER: J.PRINSLOO
DATE:
SCALE: NTS

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.
JW NUMBER: JW14060R-ME-025
CONSULTANT'S NUMBER: H357555-ME-025
FILE No: BW1403

Approved for Bid

Xr: ,,mmohapi 01-FEB-2022 09:30
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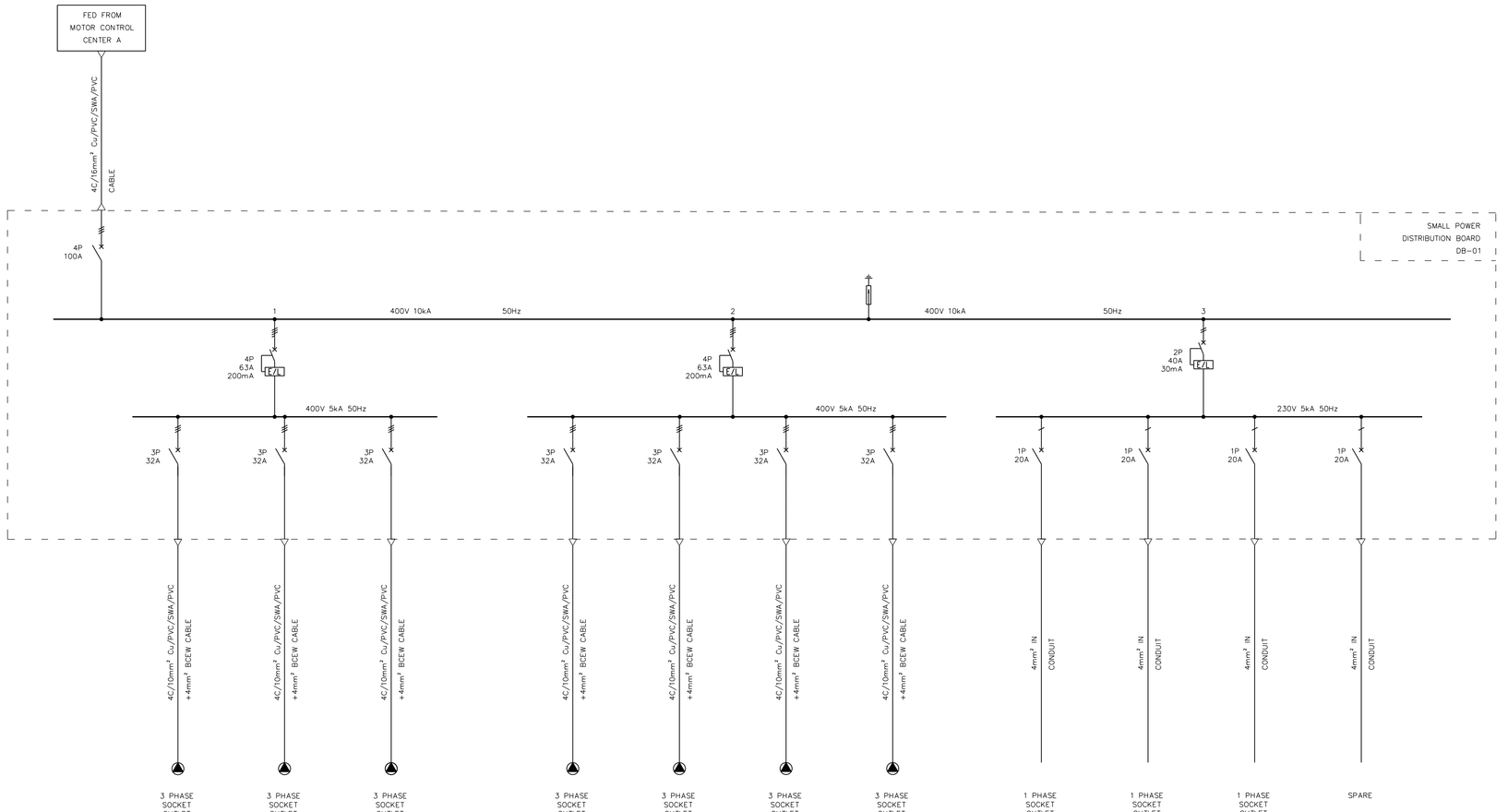

LEGEND:

- WITHDRAWABLE MV CIRCUIT BREAKER
- LV CIRCUIT BREAKER
- EARTH SWITCH
- INTER LOCK
- EARTH
- AMP METER
- VOLTMETER
- VOLTMETER SELECTOR SWITCH
- WELDING SOCKET 4 PIN, 20A, 400V
- FUSE
- UPS — UNINTERUPPTED POWER SUPPLY
- PFC — POWER FACTOR CORRECTION
- DOL MOTOR STARTER
- REVERSE/FORWARD STARTER
- S/S — SOFT STARTER
- STAR/DELTA STARTER
- VARIABLE SPEED DRIVE
- 3 PHASE MOTOR
- SURGE ARRESTOR
- MOTOR DRIVE HEATER
- THERMISTOR
- E/STOP — EMERGENCY STOP
- LCP — LOCAL CONTROL PANEL
- BCP — BELT PRESS CONTROL PANEL
- BCP/I — EQUIPMENT ASSOCIATED WITH BELT PRESS & INDICATION ON BELT PRESS CONTROL PANEL.
- ISOLATOR
- CABLE GLAND

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

SMALL POWER DISTRIBUTION BOARD

SINGLE LINE DIAGRAM

DESIGN MANAGER J.PRINSLOO

DATE

SCALE NTS

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER JW14060R-ME-026

CONSULTANT'S NUMBER H357555-ME-026

FILE No BW1403

Approved for Bid

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31-JAN-2022
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CONTINUES FROM H357555-ME-012

BELT PRESS MOTOR CONTROL CENTRE C

CONTINUES BELOW

400V, 50Hz, 3Ph,30kA

60A 4P E/L

400V, 50Hz, 3Ph,20kA

10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW POLY FLUSH VALVE No.1
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW POLY FLUSH VALVE No.2
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW POLY FLUSH VALVE No.3
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW POLY FLUSH VALVE No.4
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW POLY CONTROL VALVE No.1
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW POLY CONTROL VALVE No.2
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW POLY CONTROL VALVE No.3
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW POLY CONTROL VALVE No.4
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW WAS CONTROL VALVE No.1
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW WAS CONTROL VALVE No.2
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW WAS CONTROL VALVE No.3
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW WAS CONTROL VALVE No.4
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW WAS ISOLATION VALVE No.4
10A 3P	4C/4mm² Cu/PVC/SWA/PVC CABLE	3kW WASH WATER ISOLATION VALVE
60A 3P	4C/16mm² Cu/PVC/SWA/PVC CABLE +10mm² BCEW	SMALL POWER DB
S/S	4C/120mm² Cu/PVC/SWA/PVC CABLE	110kW WASH WATER PUMP No.3
LCP	3C/2.5mm² Cu/PVC/SWA/PVC CABLE	BCP/1
S/S	4C/120mm² Cu/PVC/SWA/PVC CABLE	110kW WASH WATER PUMP No.4
LCP	3C/2.5mm² Cu/PVC/SWA/PVC CABLE	BCP/1
	4C/4mm² Cu/PVC/SWA/PVC CABLE	5.5kW SCREW FEEDER
LCP	3C/2.5mm² Cu/PVC/SWA/PVC CABLE	
	4C/4mm² Cu/PVC/SWA/PVC CABLE	5.5kW BELT PRESS HOLDING TANK MIXER
LCP	3C/2.5mm² Cu/PVC/SWA/PVC CABLE	BCP/1

CONTINUES ABOVE

BELT PRESS MOTOR CONTROL CENTRE C

400V, 50Hz, 3Ph,30kA

100A 3P

32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	BP1 PLC DB
32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	BP2 PLC DB
32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	BP3 PLC DB
32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	BP4 PLC DB
32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	COMMON PLC DB
32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	BP1 CONTROL PANEL
32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	BP2 CONTROL PANEL
32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	BP3 CONTROL PANEL
32A 1P	3C/6mm² Cu/PVC/SWA/PVC CABLE	BP4 CONTROL PANEL

20A 1P — 3C/4mm² Cu/PVC/SWA/PVC CABLE — UPS 3kVA 3min — 3C/4mm² Cu/PVC/SWA/PVC CABLE — INSTRUMENT DISTRIBUTION BOARD

32A 1P — 3C/10mm² Cu/PVC/SWA/PVC CABLE — INVERTER — BATTERIES — SOLAR PANELS

3C/10mm² Cu/PVC/SWA/PVC CABLE — LIGHTING DISTRIBUTION BOARD DB01

LEGEND:

- WITHDRAWABLE MV CIRCUIT BREAKER
- LV CIRCUIT BREAKER
- EARTH SWITCH
- INTER LOCK
- EARTH
- AMP METER
- VOLTMETER
- VOLTMETER SELECTOR SWITCH
- FUSE
- UPS — UNINTERUPPTED POWER SUPPLY
- PFC — POWER FACTOR CORRECTION
- DOL MOTOR STARTER
- REVERSE/FORWARD STARTER
- S/S — SOFT STARTER
- STAR/DELTA STARTER
- VARIABLE SPEED DRIVE
- M 3~ — 3 PHASE MOTOR
- SURGE ARRESTOR
- MOTOR DRIVE HEATER
- THERMISTOR
- E/STOP — EMERGENCY STOP
- LCP — LOCAL CONTROL PANEL
- BCP — BELT PRESS CONTROL PANEL
- BCP/1 — EQUIPMENT ASSOCIATED WITH BELT PRESS & INDICATION ON BELT PRESS CONTROL PANEL.
- ISOLATOR
- CABLE GLAND

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M MOHAPI
DRAWN	M MOHAPI
CHECKED	D VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
BELT PRESS MOTOR CONTROL CENTER C
SINGLE LINE DIAGRAM – SHEET 2 OF 2

DESIGN MANAGER J PRINSLOO — DATE

SCALE NTS

AMENDMENTS

		APPROVED	DATE
T02	ISSUED FOR RETENDER	D.VISSER	01/02/22

DRAWING No.

JW NUMBER JW14060R-ME-027
CONSULTANT'S NUMBER H357555-ME-027
FILE No BW1403

Approved for Bid

dd: 31-JAN-2022 13:54
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CONTINUES FROM H357555-ME-013 SHEET 1

BELT PRESS MOTOR CONTROL CENTRE A EXISTING INSTALLATION

CONTINUE BELOW

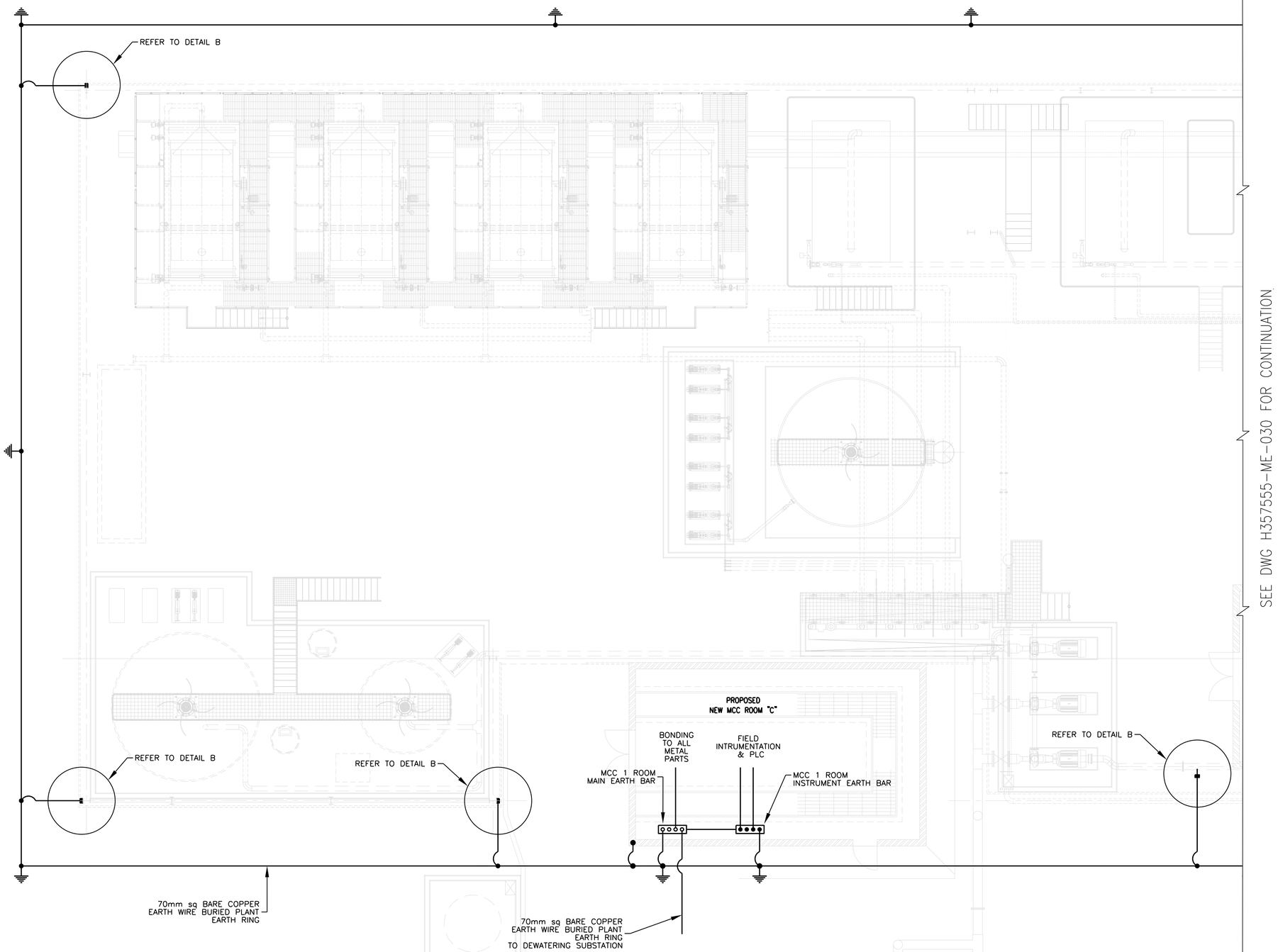
400V,50Hz,3Ph,30kA

400V,50Hz,3Ph,30kA

60A 4P E/L

400V,50Hz,10kA

| | | |



LEGEND

- REINFORCED STEEL EARTHING CONNECTION AND LIGHTING PROTECTION
- EARTH ELECTRODE ROD – EXOTHERMIC WELD
- EARTHING CONNECTIONS – EXOTHERMIC WELD
- PLANT EARTH BARS
- INSTRUMENTATION EARTH BAR
- 70mm sq COPPER EARTH WIRE BURIED PLANT EARTH RING

NOTES:

DETAIL A – CONNECTION TO LIGHTNING PROTECTION DOWN CONDUCTOR FROM BRICK WALL (DETAIL TO BE PROVIDED BY EARTHING SPECIALIST).

DETAIL B – CONNECTION TO STEEL COLUMN (DETAIL TO BE PROVIDED BY EARTHING SPECIALIST)

ALL EQUIPMENT BONDED TO CABLE RACKING

ALL STEEL WILL BE BONDED TO EACH OTHER AND THEN TO THE MAIN EARTH BAR IN A BUILDING.

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MOHAPI
DRAWN	M.MOHAPI
CHECKED	D.VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
NEW BELT PRESSES
EARTHING AND LIGHTNING PROTECTION – AREA 2

DESIGN MANAGER
J. PRINSLOO
DATE 21/02/2020

SCALE
AS SHOWN

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-029
CONSULTANT'S NUMBER
H357555-ME-029
FILE No
BWW1403

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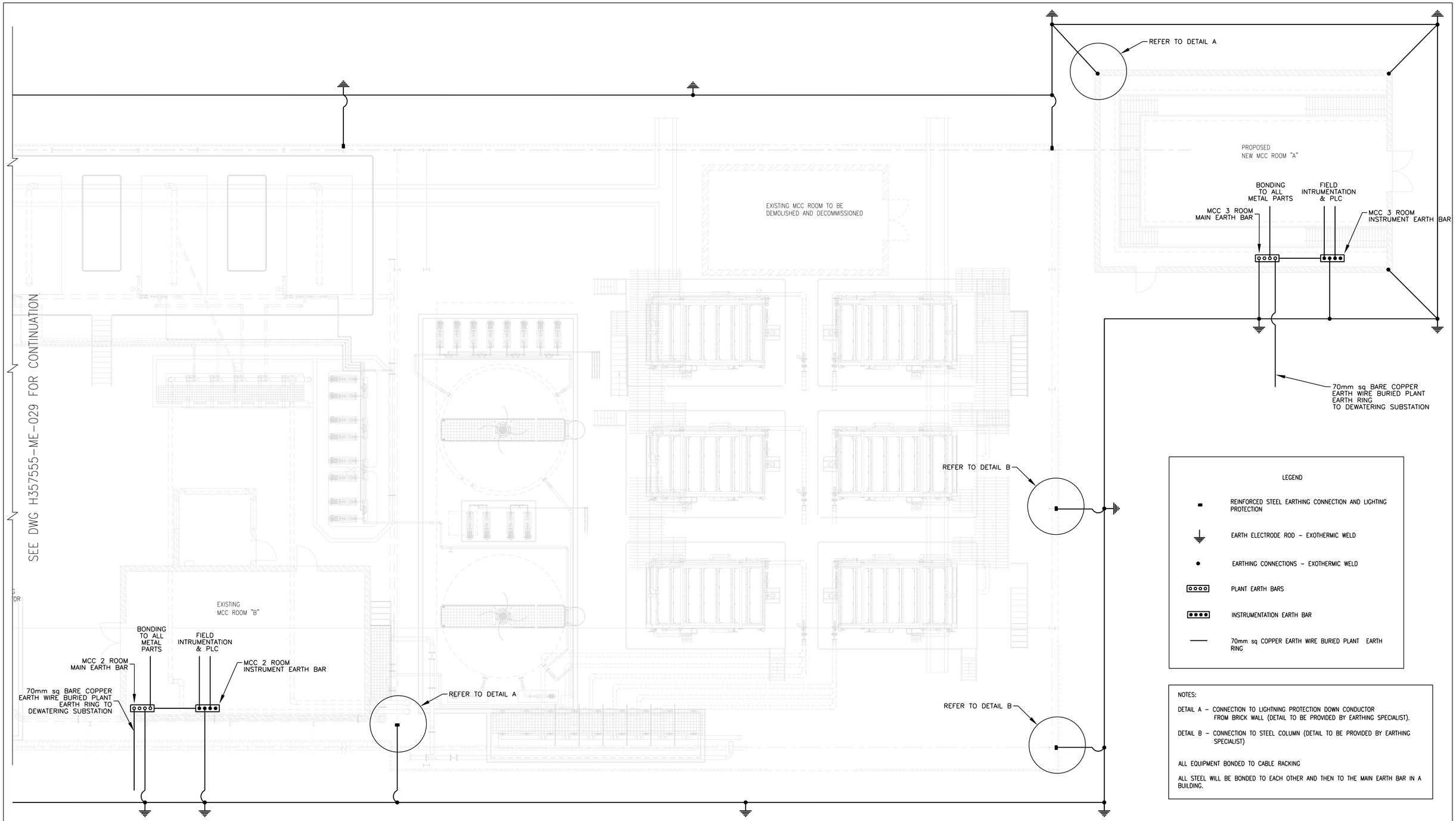

NOTES:

DETAIL A – CONNECTION TO LIGHTNING PROTECTION DOWN CONDUCTOR FROM BRICK WALL (DETAIL TO BE PROVIDED BY EARTHING SPECIALIST).

DETAIL B – CONNECTION TO STEEL COLUMN (DETAIL TO BE PROVIDED BY EARTHING SPECIALIST)

ALL EQUIPMENT BONDED TO CABLE RACKING

ALL STEEL WILL BE BONDED TO EACH OTHER AND THEN TO THE MAIN EARTH BAR IN A BUILDING.

EARTHING AND LIGHTING LAYOUT
SCALE :1:75

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MOHAPI
DRAWN	M.MOHAPI
CHECKED	D.VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
NEW BELT PRESSES
EARTHING AND LIGHTNING PROTECTION – AREA 2

DESIGN MANAGER: J. PRINSLOO

DATE 21/02/2020

SCALE: AS SHOWN

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	D.VISSER	01/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-030
CONSULTANT'S NUMBER
H357555-ME-030
FILE No
BWW1403

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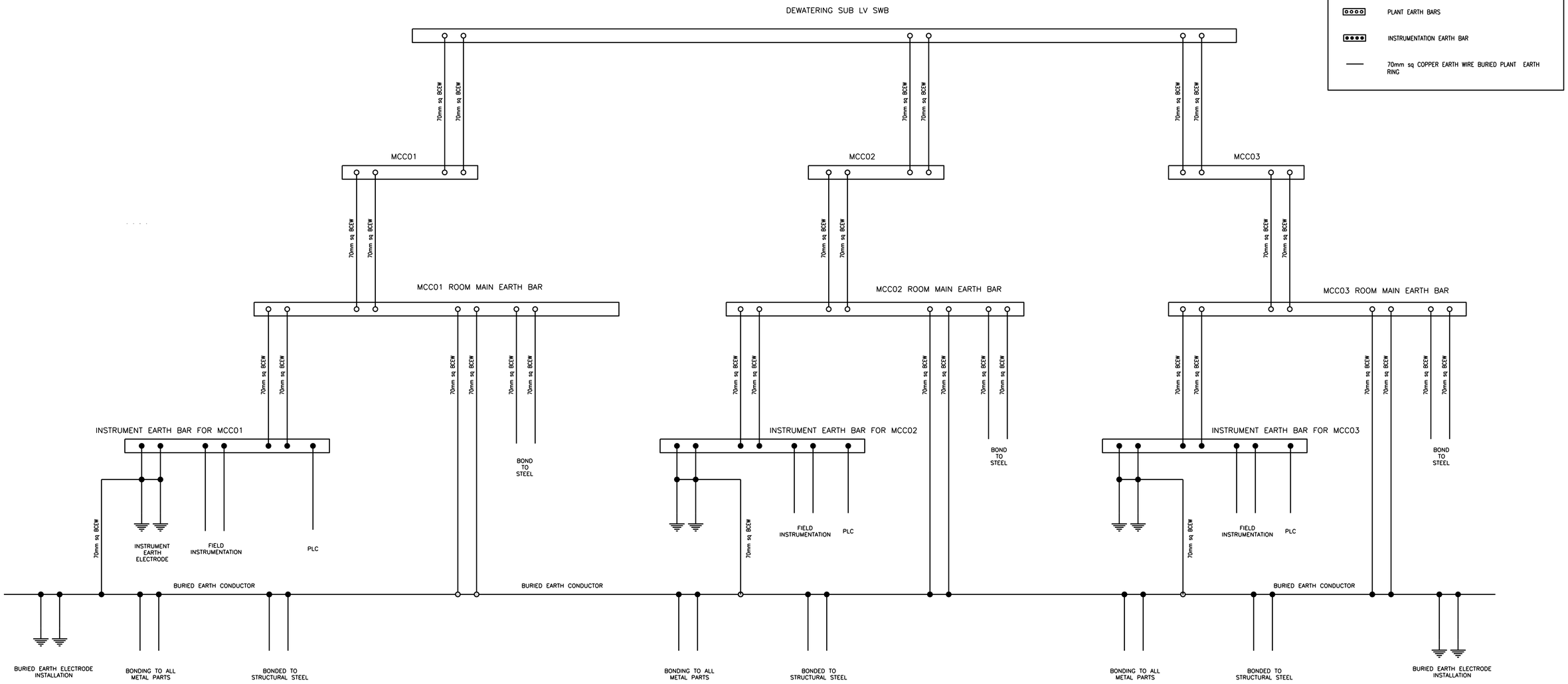

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MOHAPI
DRAWN	M.MOHAPI
CHECKED	D.VISSER
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS

DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES

NEW BELT PRESSES EARTHING AND LIGHTNING PROTECTION SCHEMATIC DIAGRAM

DESIGN MANAGER: J. PRINSLOO

DATE: 21/02/2020

SCALE: AS SHOWN

AMENDMENTS	APPROVED	DATE
T02 ISSUED FOR RETENDER	D.VISSER	01/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-031

CONSULTANT'S NUMBER
H357555-ME-031

FILE No
BWW1403

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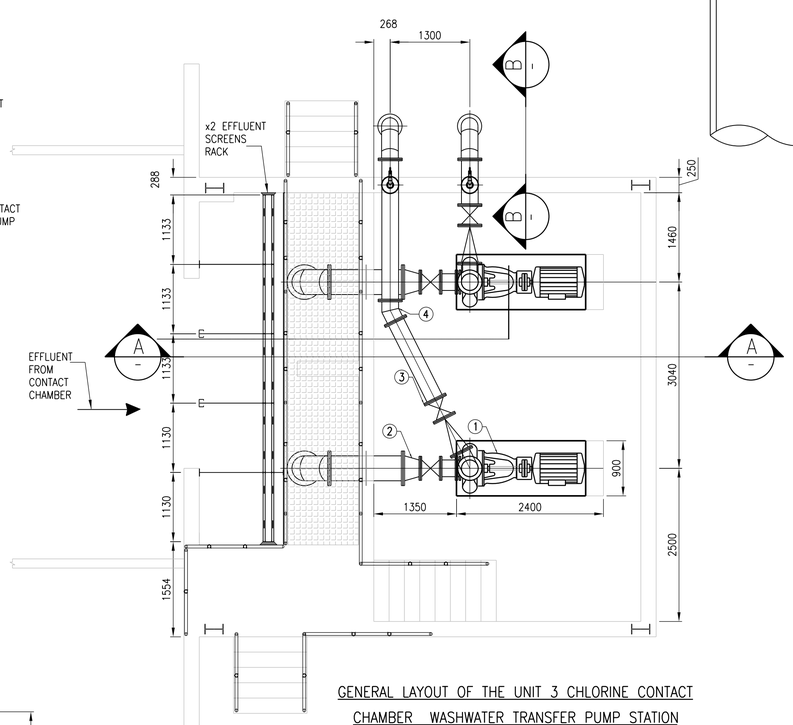
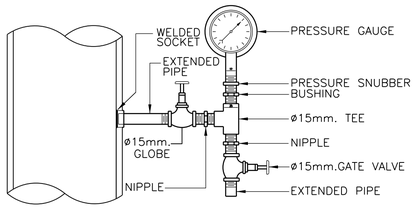
KEY PLAN 1:1000



GENERAL LAYOUT OF THE UNIT 3 CHLORINE CONTACT CHAMBER WASHWATER TRANSFER PUMP STATION

SCALE 1:50



PRESSURE GAUGE TYPICAL DETAIL

SCALE 1:5

GENERAL NOTES:

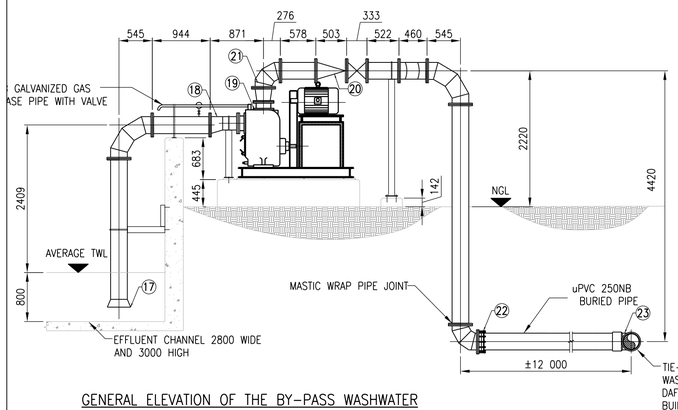
1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. A CONTRACTOR OR SUB-CONTRACTOR SHALL CHECK THE NET LOAD OF THE BELT PRESS AND SEND TO THE ENGINEERING SERVICE MANAGER(EMS) FOR FOUNDATION LOADS DISTRIBUTION.
8. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION,OR RELEVANT SABS 1200 SPECIFICATION.
10. ALL PIPE AND BELT PRESS COVERS TO BE STAINLESS STEEL UNLESS OTHERWISE STATED.
11. RS40 "MENTIS GRATING,40x3 BEARER BARS,BANDED AND HOT DIPPED GALVANIZED TO SANS 121.
12. SOME EXISTING BRICK WORK ARE TO BE DECOMMISSIONED AND DEMOLISHED FOR BUILDING CLEARANCE PRIOR TO INSTALLING THE BELT PRESS,THAT SHOULD BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR INSTRUCTION BEFORE WORK IS UNDERTAKEN.

MECHANICAL NOTES

1. STRICT REFERENCE TO JOHANNESBURG WATER SPECIFICATIONS
   a. M15 FILTER BELT PRESS.
   b. M30 POLY DOSING PUMPS.
   c. M21 PRESSURE PIPE WORK.
   d. M18 CENTRIFUGAL PUMPS.
   e. M20 VALVES.
2. DRAWING SHALL BE READ INCONJUCTION WITH ALL DRAWINGS IN JW14060-GEN-001.
3. ALL PIPE WORK SUPPORT STRUCTURES TO BE HOT DIPPED GALVANISED UNLESS OTHERWISE STATED.
4. ALL FLANGE DRILLING SHALL BE IN ACCORDANCE TO SANS 1123 TABLE 1000/3. FOR SLUDGE AND TABLE 1600/3. FOR WASH WATER.
5. PUMP SUCTION INVERT LEVEL WILL BE DEFINED WITH REFERENCE TO THE SELECTED PUMP DIMENSION.
6. SUITABLE INSULATION MATERIAL SHALL BE USED BETWEEN THE CONTACT FACES OF DISSIMILAR MATERIALS. GASKETS SHALL BE A MINIMUM OF 3MM THICK FULL FACE WITH A DRILLING TO SANS 1123-SPECIFIC TABLE.
7. CORROSION PROTECTION AND COLOR CODE SHALL BE IN ACCORDANCE WITH THE JOHANNESBURG WATER STANDARDS SPECIFICATION G01 AND G02.
8. ALL FASTENERS MUST MATCH PIPEMATERIAL UNLESS OTHERWISE STATED.
9. THE CONTRACTOR SHALL INCLUDE FOR ALL NECESSARY PREPARATION WORK REQUIRED ON THE EXISTING STRUCTURES MODIFICATION TO SUITE THE EQUIPMENT.

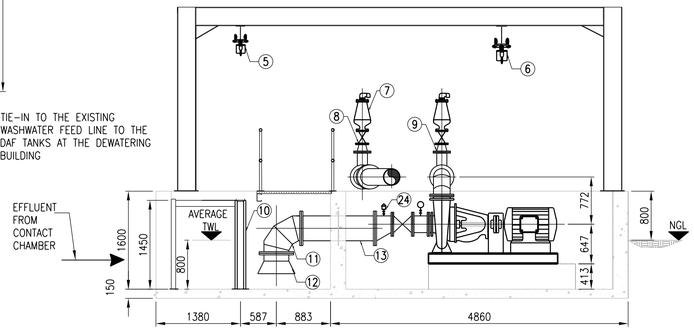
CIVIL CONCRETE NOTES

1. REFER TO DRAWING JW14060-ME-001 & 2 FOR GENERAL NOTES



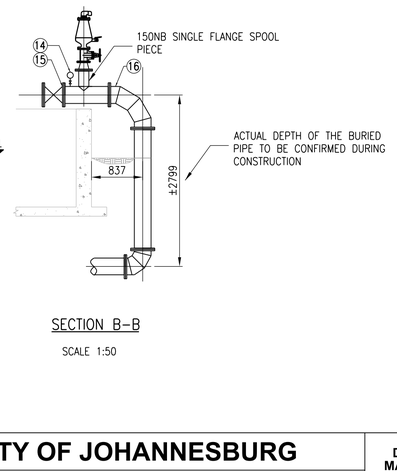
GENERAL ELEVATION OF THE BY-PASS WASHWATER TRANSFER PUMP

SCALE 1:50



SECTION A-A

SCALE 1:50



SECTION B-B

SCALE 1:50

WASHWATER TRASNFER EQUIPMENT AND PIPEWORK SCHEDULE FOR TENDER PURPOSE

ITEM NO.	SPEC. NO.	DIA. (MM)	QTY	SIZE (mm)	DESCRIPTION
1	M18	-	2	-	WASHWATER TRANSFER PUMP WITH DRIVE MOTOR AT 540 m³/hr AT 15m HEAD.
2	SANS 719	400-250	2	280 F/F	EPOXY COATED MILD STEEL FLATTOP REDUCER
3	SANS 1123	250	52	1000 / 3	EPOXY COATED MILD STEEL FLANGES RATED TO PN10
4	SANS 719	250	1	140 C/F	EPOXY COATED MILD STEEL 22.5° OR 2 SEGMENTED ELBOW
5	-	-	1	500 KG	SCREENS CRAWL BEAM WITH MANUAL HOISTING (CHAIN) EQUIPMENT
6	-	-	1	2000 KG	PUMP STATION EQUIPMENT CRAWL BEAM WITH MANUAL HOISTING (CHAIN) EQUIPMENT
7	M20	80	3	PN10	WASTEWATER AIR AND VACUUM VALVE
8	M20	80	3	PN10	MANUAL ISOLATION RESILIENT SEAL VALVE
9	SANS 62	150-80	3	130 F/F	EPOXY COATED MILD STEEL CONCENTRIC REDUCER
10	M01	-	10	2	1400 HIGH x 1130 WIDE ALUMINUM EFFLUENT SCREEN
11	SANS 719	400	2	405 F/F	EPOXY COATED MILD STEEL 90° OR 4 SEGMENTED ELBOW
12	SANS 719	400	2	610	EPOXY COATED MILD STEEL BELLMOUTH
13	SANS 719	400	2	1200 F/F	EPOXY COATED MILD STEEL AND WRAPPED PUDDLE FLANGED PIPE
14	M18	25	6	-	GLYCERINE FILLED PRESSURE GAUGES WITH TELL TALE AND ASSOCIATED ANCILLARIES AS PER TYPICAL DETAIL
15	M20	250	5	PN10	MANUAL ISOLATION RESILIENT SEAL VALVE
16	SANS 719	250	4	510 F/F	EPOXY COATED MILD STEEL 90° MEDIUM RADIUS SEGMENTED ELBOW
17	SANS 719	250	1	380	EPOXY COATED MILD STEEL BELLMOUTH
18	SANS 719	250-200	1	205 F/F	EPOXY COATED MILD STEEL FLATTOP REDUCER
19	M18	-	1	-	WASHWATER TRANSFER SELF-PRIMMING PUMP WITH DRIVE MOTOR AT 540 m³/hr AT 15m HEAD.
20	M20	250	3	PN10	NON-SLAMMING CHECK (NON-RETURN VALVE)
21	SANS 719	250	5	280 F/F	EPOXY COATED MILD STEEL 90° LONG RADIUS SEGMENTED ELBOW
20	M20	250	3	PN10	NON-SLAMMING CHECK (NON-RETURN VALVE)
21	SANS 719	250	5	280 F/F	EPOXY COATED MILD STEEL 90° LONG RADIUS SEGMENTED ELBOW
22	M20	250	1	PN10	FLEXIBLE FLANGE COUPLING
23	SANS 719	250	1	PN10	uPVC EQUAL TEE
24	M20	25	2	PN10	VACUUM AND AIR VALVE
25	M21	250	1	18000	EPOXY COATED MILD STEEL PIPE (ACCUMULATIVE)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M. MAHLANGU
DRAWN	M. MAHLANGU
CHECKED	S. MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS REPLACEMENT AND ASSOCIATED ANCILLARIES
GENERAL ARRANGEMENT OF THE UNIT 3 CHLORINE CONTACT CHAMBER WASHWATER TRANSFER PUMPS

DESIGN MANAGER
J. PRINSLOO

DATE 20/02/2020

SCALE
AS SHOWN

AMENDMENTS

		APPROVED	DATE
T00	INTERNAL REVIEW	J. PRINSLOO	02/07/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	02/07/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-ME-032

CONSULTANT'S NUMBER
H357555-ME-032

FILE No
BWW1403

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03-FEB-2022
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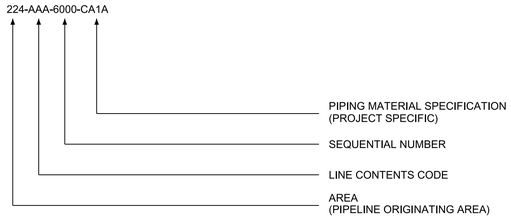
PIPE LINE NUMBERING



LINE CONTENS CODE

CA	COMPRESSED AIR
BW	BOREHOLE WATER
EW	EFFLUENT (WATER)
PCW	PROCESS WATER
PW	POTABLE (WATER)
RDW	RETURN DAM WATER
RSW	RAW SEWAGE WATER
SL	SLURRY
SM	STORM WATER
ST	SEWAGE EFFLUENT
SW	SPRY WATER
TW	TRANSFER WATER
WB	BACHWASH

PIPING MATERIAL CODE

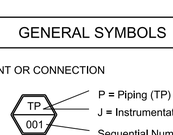
GRP	GLASS RENIFORCED
MS	MILD STEEL
PE	HOPE
PL	HOPE LINED MILD STEEL
PVC	PLASTICISED POLYVINYL CHLORIDE
RH	RUBBER HOSE
RL	RUBBER LINED MILD STEEL
RR	RENFORCED RUBBER HOSE
SS	STAINLESS STEEL
C	CONCRETE

INSULATION & HEAT TRACING CODES

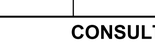
TYPE CODE	DESCRIPTION
AS	ANTI SWEAT
PP	PERSONAL PROTECTION
HC25	HEAT CONSERVATION 25mm THICK
HC50	HEAT CONSERVATION 50mm THICK
HC75	HEAT CONSERVATION 75 mm THICK
HC100	HEAT CONSERVATION 100mm THICK
SR	SOLAR RADIATION
ST	STEAM TRACING
ET	ELECTRICAL TRACING
NA	NOISE ABATEMENT
NI	NO INSULATION

GENERAL SYMBOLS

TIE-IN POINT OR CONNECTION

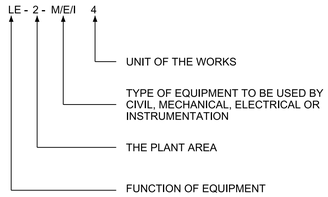


DRAWING SHEET CONNECTOR

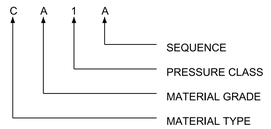


SPEC CHANGE

EQUIPMENT IDENTIFICATION



PIPE MATERIAL CLASS



PIPE MATERIAL TYPE & GRADE

REFER TO IPAS MP PIPING MATERIAL CLASS GUIDE
"PI-G-021"
(Found in Major Project Toolkit)
TO BE POPULATED AS PER
SPECIFIC PROJECT REQUIREMENTS.

C CARBON STEEL

B ASTM A53 GR. B
D ASTM A106 GR. B
G API-5L GR. B ERW

S STAINLESS STEEL

A 304 (UNS S30400)
C 304L (UNS S30403)
D 316 (UNS S31600)
F 316L (UNS S31603) OR DUEL CERTIFIED

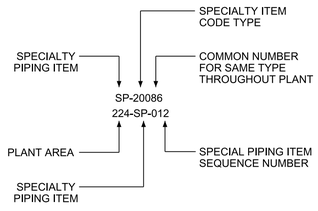
PIPE MATERIAL CLASS

REFER TO IPAS MP PIPING MATERIAL CLASS GUIDE
"PI-G-021"
(Found in Major Project Toolkit)
TO BE POPULATED AS PER
SPECIFIC PROJECT REQUIREMENTS.

TYPE CODE	DESCRIPTION
1	CLASS 150
2	CLASS 2500
3	CLASS 300
4	CLASS 3000
5	CLASS 1500
6	CLASS 600
7	NON ANSI
8	CLASS 800
9	CLASS 900

DEPARTMENT	APPROVED	DESIGNATION	DATE

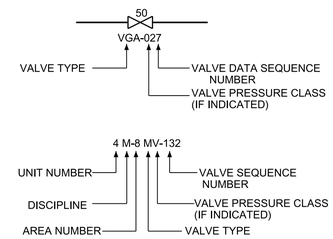
SPECIALTY PIPING ITEM TAG SYSTEM



SPECIALTY PIPING ITEM TAG CODES

TYPE CODE	DESCRIPTION
04	HOSES
05	HOSE ADAPTORS
06	FILTRATION/STRAINERS
07	SAFETY ITEMS
08	FLEXIBILITY ITEMS
09	TRAPS
10	DRAINAGE/OVERFLOW
11	FIRE WATER ITEMS
12	TANK/VESSEL ITEMS
13	NON REGISTERED VESSELS
14	SILENCERS
15	DAMPERS/RELIEF DEVICES
16	COUPLINGS & FLANGES (NON-STD)
17	EXTENSION DEVICES/OPERATORS
18	SPACERS/BLINDS (NON-STD)
19	VENTS
20	SAFETYSHOWER/EYEWASH
21	HEATING/COOLING DEVICES
22	SPECIAL PIPE FITTINGS
23	SIPHON/VACUUM BREAKERS
24	LAUNDERS
25	MISCELLANEOUS

VALVE TAG SYSTEM

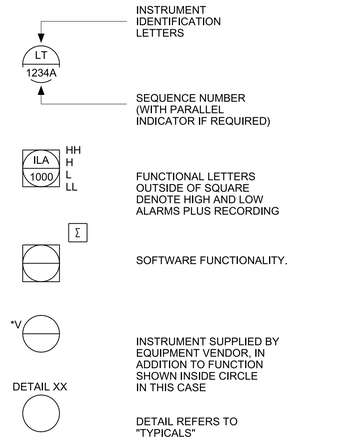


VALVE TYPE CODES

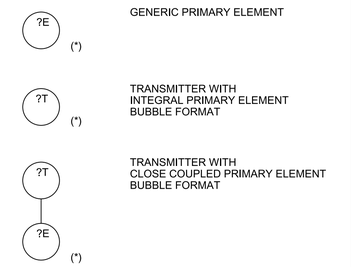
TYPE CODE	DESCRIPTION
AV	AIR VALVE
BFV	BUTTERFLY VALVE
BGV	BRASS GATE VALVE
BV	BALL VALVE
CV	CONTROL VALVE
FBDV	FULL BORE DIAPHRAM VALVE
NRV	NON-RETURN VALVE
KGV	KNIFE GATE VALVE
NLV	NEEDLE VALVE
PBV	PLASTIC BALL VALVE
PCV	PRESSURE CONTROL VALVE
PR	PRESSURE RECEDE VALVE
PS	PENSTOCK/ SLUICE GATE VALVE
PV	PRESSURE REDUCING VALVE
RSG	RESIUENT SEAL GATE VALVE
RV	REFLUX VALVE
SG	SOLENOID OPERATED GATE VALVE
TWSV	THREE WAY SLUDGE VALVE
W	WEIR
WDV	WEIR DIAPHRAM VALVE
WGV	WEDGE GATE VALVE
XV	MECHANICAL ACTUATED VALVE
ASTR	AUTOMATIC SELF CLEANING STRAINER
STR	MANUAL STRAINER
SMX	SLUDGE/FLOCULATION IN-LINE MIXER
MX	MECHANICAL IN-LINE MIXER
CLV	ISOLATION VALVE

ABBREVIATIONS

AC	AIR COMPRESSED
AE	AERATOR
AG	AGITATOR
A/M	AUTO/MANUAL
AS	AIR SUPPLY
BD	BLOW DOWN
BIO	BIOREACTOR
BL	BATTERY LIMIT
BP	BELT PRESS
C	CIVIL
CAM	CAMERA
CCR	CENTRAL CONTROL ROOM
CO	CHAIN OPERATED
CP	COMPRESSOR
CV	CONVEYOR
D	DRAIN
DE	DE-ENERGIZE
DO	DESOLVED OXYGEN METER
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
E	ELECTRICAL
E/I	VOLTAGE IN/CURRENT OUT
ES	ELECTRICAL SUPPLY
ESD	EMERGENCY SHUTDOWN
E/P	VOLTAGE IN/PNEUMATIC OUT
FC	FAIL CLOSED
FL	FAIL LAST
FL/DC	FAIL LAST - DRIFT CLOSED
FL/DO	FAIL LAST - DRIFT OPEN
FO	FAIL OPEN
FP	FULL PORT
GO	GEAR OPERATOR
GS	GAS SUPPLY
HC	HOSE CONNECTION
HLL	HIGH LIQUID LEVEL
HOA	HAND-OFF-AUTOMATIC
HP	HIGH PRESSURE
HP	HOPPER
HPT	HIGH POINT
HPV	HIGH POINT VENT
HRN	HORN
HS	HYDRAULIC SUPPLY
I	INSTRUMENTATION
IA	INSTRUMENT AIR
ID	INSIDE DIAMETER
IP	INSPECTION PORT
I/P	CURRENT IN/PNEUMATIC OUT
LA	LAUNDER
LC	LOCKED CLOSED
LO	LOCKED OPEN
LP	LOW PRESSURE
LPD	LOW POINT DRAIN
LPT	LOW POINT
LLL	LOW LIQUID LEVEL
L/R	LOCAL/REMOTE
M	MECHANICAL
MBR	MIXER BIOREACOTR
MHE	MANHOLE
ML	MIXED LIQOUR
MLSS	MIXED LIQOUR SUSPENDED SOLIDS
MP	MEDIUM PRESSURE
MS	METAL SEATED VALVE
MW	MANWAY
MX	MIXER
NC	NORMALLY CLOSED
NLL	NORMAL LIQUID LEVEL
NNF	NORMALLY NO FLOW
NO	NORMALLY OPEN
NS	NITROGEN SUPPLY
OD	OUTSIDE DIAMETER
O/F	OVERFLOW
PA	PLANT AIR
PNL	PANEL
PV	PROCESS VARIABLE
REV	REVERSE ACTING
RSP	REMOTE SET POINT
RST	RESET
RTD	RESISTANCE/TEMPERATURE DETECTOR
SC	SCREEN
SG	SPECIFIC GRAVITY
SI	SILO
SP	SET POINT
SQ RT	SQUARE ROOT
SS	SOFT SEAT VALVE
SU	SUMP
S/S	STOP/START
TK	TANK
TL	TANGENT LINE
TM	THICKENER MECHANICAL
TSO	TIGHT SHUT OFF
T/T	TANGENT TO TANGENT
TV	TOTAL VOLUME
U/F	UNDER FLOW
WAS	WASTE ACTIVITED SLUDGE
WE	WITH EQUIPMENT
WS	WATER SUPPLY
WV	WORKING VOLUME
ZS	POSITION INDICATOR
PSX	PROXIMITY SWITCH
MOT	MOTOR
PMP	PUMP
FE	FINAL EFFLUENT
HPWW	HIGH PRESSURE WASH WATER
DS	DIGESTED SLUDGE
BS	BLENDED SLUDGE
PP	POWDER POLYMER
PS	POLYMER SOLUTION
LTP	LIQUOR TREATMENT PLANT



PRIMARY ELEMENT & TRANSMITTER SYMBOLS



NOTES

TYPE OF ELEMENT FROM TABLE MEASUREMENT SYMBOLS:

(*) = MEASUREMENT NOTATION (P&ID LEGEND SHEET 3)

? = MEASURED VARIABLE FROM INSTRUMENT IDENTIFICATION LETTERS TABLE

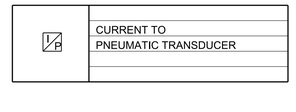
= PRIMARY ELEMENT SYMBOL

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATED VARIABLE	VARIABLE MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSE
D	DENSITY OR SPECIFIC GRAVITY	DIFFERENCE, DIFFERENTIAL		DEVIATION	
E	VOLTAGE (EMF)		SENSOR, PRIMARY ELEMENT		
F	FLOW, FLOW RATE	RATIO			
G	GAUGING (DIMENSIONAL)		GLASS, GAUGE, VIEWING DEVICE		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT		INDICATE		
J	POWER		SCAN		
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTOR		LIGHT		MIDDLE, INTERMEDIATE
N	TORQUE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE TURBIDITY		ORIFICE, RESTRICTION		OPEN
P	PRESSURE		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R	RADIATION OR RESTRICTION		RECORD		RUN
S	SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTI-VARIABLE		MULTI-FUNCTION	MULTI-FUNCTION	
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL, PROBE		
X	SOLENOID UNCLASSIFIED	X-AXIS	TRANSDUCER ACCESSORY DEVICES UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENTED SYSTEM		DRIVER,ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

NOTE: ITALICS FOR USER'S CHOICE ON ISA 5.1-2009

MISCELLANEOUS - CONVERTER



'I' OR 'P' CAN BE SUBSTITUTED BY ANY OF THE FOLLOWING SIGNAL TYPES:

A = ANALOG
B = BINARY
D = DIGITAL
E = VOLTAGE
F = FREQUENCY
I = CURRENT
H = HYDRAULIC
O = ELECTROMAGNETIC
P = PNEUMATIC
R = RESISTANCE

NOTE:
REFER TO PROJECT ASSET TAGGING MANUAL FOR SPECIFIC INFORMATION

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M. MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

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FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES

LEGEND SHEET 1
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER
J. PRINSLOO

DATE 28/02/2020

SCALE
NTS

AMENDMENTS

		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER
JW14060R-CI-001

CONSULTANT'S NUMBER
H357555-CI-001

FILE No
BWW1403

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14:21
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DISCRETE INSTRUMENTS

- PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
- PRIMARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
- FIELD MOUNTED
- AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
- AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
- HEAT/COOL TRACED INSTRUMENT

COMPUTER SYSTEM & SOFTWARE

- PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
- PRIMARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
- FIELD MOUNTED
- AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
- AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR

INSTRUMENT CONNECTION

- SOCKET WELDED INSTRUMENT CONNECTION
- WELDED INSTRUMENT CONNECTION
- WELDED INSTRUMENT CONNECTION

SHARED DISPLAY PRIMARY CHOICE OR BASIC PCS

- PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
- PRIMARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
- FIELD MOUNTED
- AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
- AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR

SHARED DISPLAY ALTERNATE CHOICE OR SIS

- PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
- PRIMARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
- FIELD MOUNTED
- AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
- AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR

PROCESS INTERPRETATION

- FLOW DIRECTION
- DIRECTION 7 ROTATION (CLOCKWISE ON PLAN)
- DIRECTION 7 ROTATION (ANTI -CLOCKWISE ON PLAN)
- MS — MANUAL SAMPLING
- 6 — PROCESS LINE REFERENCE
- P — AIR AND WATER PURGE

SOFTWARE FUNCTION SYMBOLS

- I/P — CONVERSION

VALVES

- NC (Normally Closed) / GATE VALVE / (Normally Open)
- NC (Normally Closed) / BUTTERFLY VALVE / (Normally Open)
- CHECK VALVE
- NC (Normally Closed) / KNIFE VALVE / (Normally Open)
- (Normally Closed) / DIAPHRAGM VALVE / (Normally Open)
- PRESSURE & VACUUM SAFETY VALVE
- (Normally Closed) / BALL VALVE / (Normally Open)
- NC (Normally Closed) / SLDE GATE VALVE / (Normally Open)
- NC (Normally Closed) / SLUICE VALVE / (Normally Open)

PIPE FITTINGS

- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- FLANGE / BLIND
- REDUCING FLANGE
- UNION

INSTRUMENT LINES

- INSTRUMENT SUPPLY OR CONNECTION TO PROCESS
- ELECTRICAL SIGNAL
- SOFTWARE OR DATA LINK
- HYDRAULIC
- CAPILLARY TUBING
- PNEUMATIC SIGNAL
- UNDEFINED INSTRUMENT LINE
- GUIDE ELECTROMAGNETIC LINE/ SONIC
- UNGUIDED ELECTROMAGNETIC LINE / SONIC
- WIRELESS COMUNICATION LINK
- MECHANICAL INSTRUMENT LINE
- INTELLIGENT DEVICE COMMS LINK
- SMART DEVICE COMMS LINK
- COMMUNICATION LINK/SYSTEM BUS
- RADAR
- NUCLEAR
- RADIO SIGNAL

MISCELLANEOUS

- CCTV — CCTV CAMERA
- BUZZER
- BELL
- HORN OF LIGHT
- HORN OF LOUDSPEAKER
- FILTER/REGULATOR WITH PRESSURE GAUGE

MOTORS (DRIVERS)

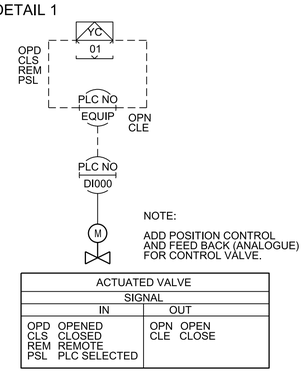
- M — DOL STARTER
- M F/R — DOL STARTER FORWARD/REVERSE
- M 2-SPEED — DOL STARTER 2-SPEED
- VSD / M — ELECTRIC WITH VARIABLE SPEED DRIVE
- S/D / M — ELECTRIC WITH START-DELTA CONNECTION
- SS / M — ELECTRIC WITH SOFT STARTER

UTALITY CONNECTIONS

- SAFETY SHOWER AND EYE WASH
- SAFETY SHOWER

TYPICAL CONFIRGULATION FOR VALVE I/O

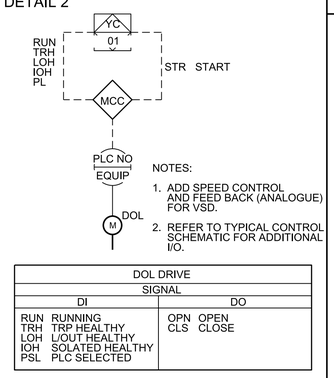
DETAIL 1



ACTUATED VALVE SIGNAL		
IN		OUT
OPD	OPENED	OPN OPEN
CLS	CLOSED	CLE CLOSE
REM	REMOTE	
PSL	PLC SELECTED	

TYPICAL CONFIRGULATION FOR MOTOR I/O

DETAIL 2



DOL DRIVE SIGNAL			
DI		DO	
RUN	RUNNING	OPN	OPEN
TRH	TRP HEALTHY		
LOH	L/OUT HEALTHY		
IOH	SOLATED HEALTHY	CLS	CLOSE
PSL	PLC SELECTED		

FIRE AND SAFETY

- FIRE HYDRANT
- FIRE MONITOR
- HOSE REEL
- HA — HOSE ASSEMBLY
- FG — FOAM GENERATOR
- UW — SPECIALITY STATION HOSE

MISCELLANEOUS CONNECTIONS

- F — FLUSHING POITN
- S — SAMPLE POINT
- V — VENT POINT
- D — DRAIN POINT
- P — PURGE OR FLUSHING CONNECTION
- DRAIN OPEN
- DRAIN CLOSED

PRIMARY ELEMENT SYMBOLS (Flow)

- M — MAGNETIC FLOW METER
- ULTRASONIC FLOW METER
- OPEN CHANEL WEIR PLATE
- OPEN CHANEL FLUME

- I — SOFTWARE INTERLOCK
- I — HARDWARE INTERLOCK

VALVE ACTUATOR/OPERATOR SYMBOLS

- ACTUATOR
- MANUAL OPERATOR
- ELECTRIC/HYDRAULIC
- M — MOTOR
- SELF CONTAINED PRESSURE REGULATOR
- SPRING RETURN
- S — SOLENOID
- BACK PRESSURE REGULATOR
- CYLINDER ACTUATOR
- PRESSURE REGULATOR

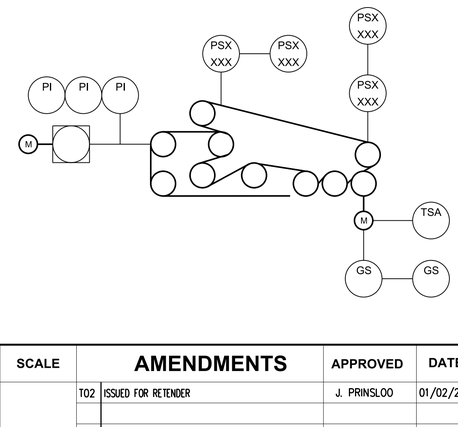
PIPING SYMBOLS

- EXPANSION JOINT
- FLEXIBLE COUPLING
- FLEXIBLE HOSE

STRAINERS

- Y STRAINER
- T STRAINER

TYPICAL BELT PRESS



DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
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NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
LEGEND SHEET 2
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER: J. PRINSLOO
DATE 28/02/2020

SCALE: NTS

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.
JW NUMBER: JW14060R-CI-002
CONSULTANT'S NUMBER: H357555-CI-002
FILE No: BWW1403

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31-JAN-2022
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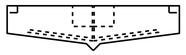
EQUIPMENTS


THICKENER TANK

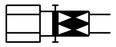
STORAGE BIN

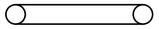
MANUAL HOPPER

TANK - OPEN TOP

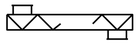
AGITATOR

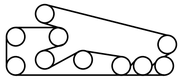
AERATOR


FLOW DIVIDER


BELT CONVEYOR

FEED CONVEYOR - SLOPED

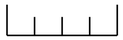

SCREW CONVEYOR

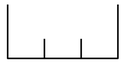

BELT PRESS

IN-LINE MIXER

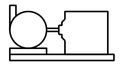
MIXER

DISTRIBUTOR BOX 1


DISTRIBUTOR BOX 2


CLASSIFIER SPLITTER BOX

FRONT RAKE SCREEN

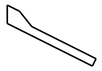

BLOWER WITH DRIVE

BLOWER

ROTARY

CENTRIFUGAL FAN

AXAIL FAN


SLAG LAUNDER

SLUICING LAUNDER

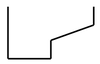
SPIRAL CLASSIFIER

BELT FILTER

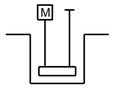
MATTE LAUNDER

HEAT EXCHANGER
CLOSED LOOP

FLOTATION CELL
WITH AGITATOR

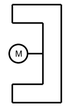

PIT

SUMP PIT



SUMP PUMP

SUMP



POSITIVE DISPLACEMENT PUMP

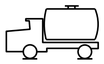
VERTICAL PUMP

CENTRIFUGAL PUMP

VARIABLE SPEED

PERISTALTIC PUMP

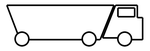
SCREW PUMP


DELIVERY TANKER

ROAD TANKER

HANDLING TIPPER TANK

FRONT AND LOADER


SHUTTLER CAR

STORAGE TANK

POLYMER SILO

JET WET UNIT

JET WET EDUCTOR
UNIT

PUMP DUTY CYCLES:

D/D	2 PUMPS NORMALLY CAN RUN
D/S	1 DUTY/1 STANDBY IN BANKS OF 2
D/D/S	2 DUTY/1 STANDBY IN BANKS OF 3
D/D/D	ALL 3 PUMPS NORMALY CAN RUN

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
LEGEND SHEET 3
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER J. PRINSLOO

DATE 28/02/2020

SCALE NTS

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER JW14060R-CI-003

CONSULTANT'S NUMBER H357555-CI-003

FILE No BWW1403

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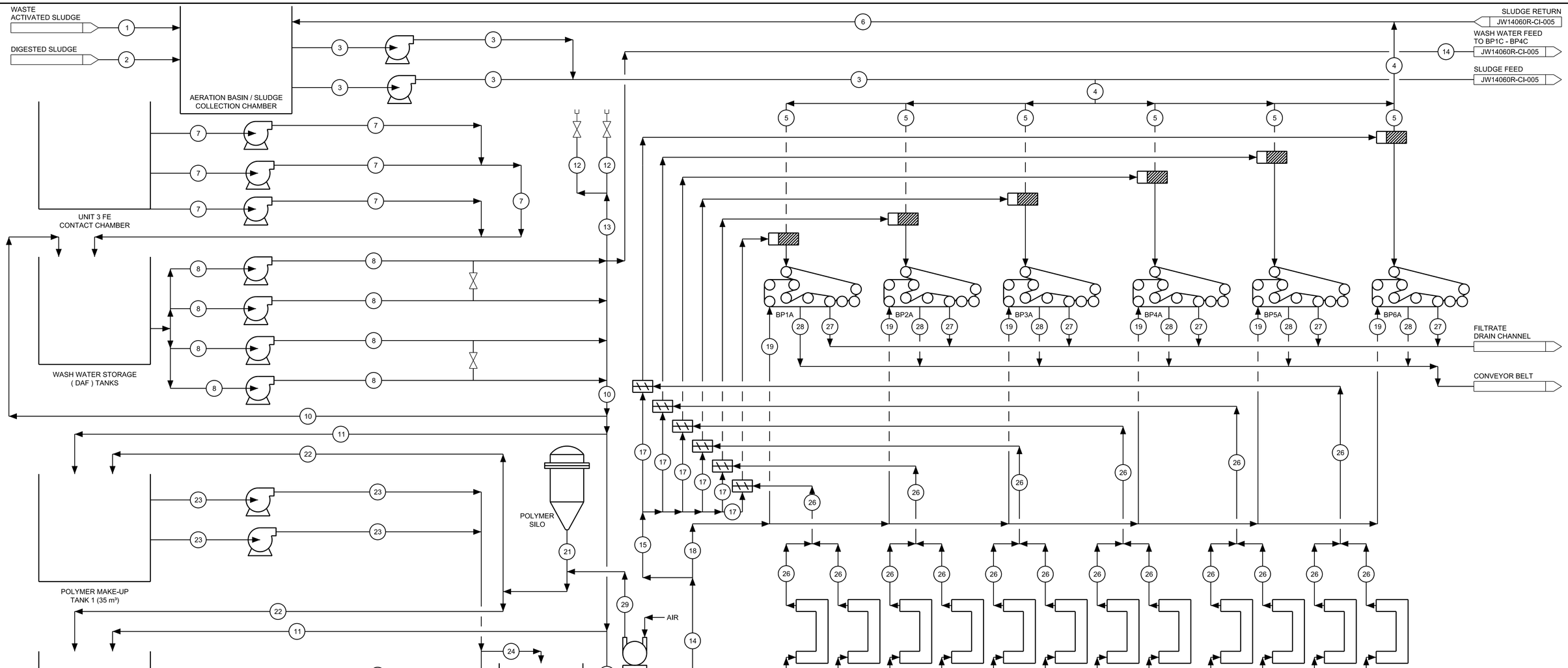

Technical Specification			Line Numbers																												
Description		Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Carried Fluid		-	WAS	DS	BS	BS	BS	BS	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	PP	PP	PS	PS	PS	PS	Filtrate	SC	Air
Pipe Diameter (Nominal Ball, NB)		mm	-	-	250	200	150	200	300	200	200	150	65	25	65	150	100	150	25	125	50	50	65	65	65	65	65	25	110	-	65
Pipe material		-	-	-	304L S/S	304L S/S	304L S/S	304L S/S	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	uPVC	-	HDG Mild steel
Fluid Flow	Nominal	m³/hr	112.66	14.52	396.00	84.00	14.00	114.00	540.00	250.00	250.00	106.00	4.50	5.00	5.00	198.20	30.00	86.00	5.00	89.00	14.00	20.00	180 kg/hr	180 kg/hr	28.80	57.60	0.00	0.00	32.00	108 kg/hr	250.00
	Maximum	m³/hr	196.17	21.85	396.00	150.00	25.00	396.00	540.00	250.00	250.00	106.00	11.00	5.00	30.00	250.00	67.20	161.20	11.20	125.00	20.00	22.00	180 kg/hr	180 kg/hr	51.45	102.90	1.90	1.90	58.29	270 kg/hr	250.00
Line working pressure	Minimum	kPa	-	-	150.00	85.92	140.00	150.00	150.00	800.00	800.00	650.00	500.00	500.00	500.00	700.00	200.00	680.00	140.00	600.00	600.00	600.00	-	-	60.00	60.00	60.00	60.00	-	-	35.00
	Maximum	kPa	-	-	225.00	128.88	210.00	225.00	225.00	1200.00	1200.00	975.00	750.00	750.00	750.00	1050.00	300.00	1020.00	210.00	900.00	900.00	900.00	-	-	90.00	90.00	90.00	90.00	-	-	53.00
Nominal Solids concetration		(w/w) %	3.90	2.50	3.74	3.74	3.74	3.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	100.00	100.00	0.50	0.50	0.50	0.50	0.30	18.00	-

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

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CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
PROCESS FLOW DIAGRAM
SHEEET 1 OF 2

DESIGN MANAGER: J. PRINSLOO
DATE: 28/02/2020

SCALE: NTS

AMENDMENTS

		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER
JW14060R-CI-004

CONSULTANT'S NUMBER
H357555-CI-004

FILE No
BWW1403

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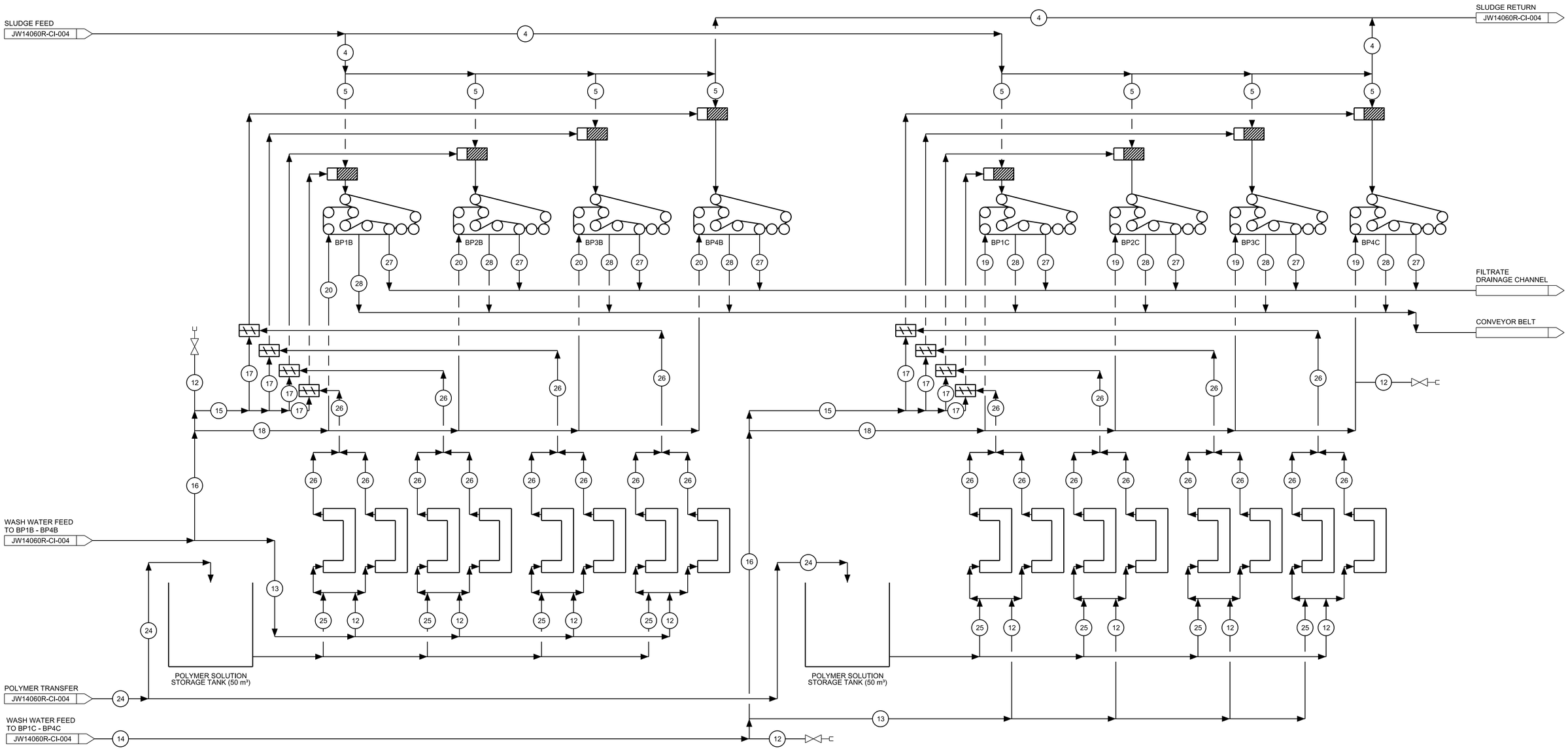

Technical Specification			Line Numbers																												
Description		Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Carried Fluid		-	WAS	DS	BS	BS	BS	BS	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	HPWW	PP	PP	PS	PS	PS	PS	Filtrate	SC	Air
Pipe Diameter (Nominal Ball, NB)		mm	-	-	250	200	150	200	300	200	200	150	65	25	65	150	100	150	25	125	50	50	65	65	65	65	65	25	110	-	65
Pipe material		-	-	-	304L S/S	304L S/S	304L S/S	304L S/S	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	HDG Mild steel	uPVC	-	HDG Mild steel
Fluid Flow	Nominal	m³/hr	112.66	14.52	396.00	84.00	14.00	114.00	540.00	250.00	250.00	106.00	4.50	5.00	5.00	198.20	30.00	86.00	5.00	89.00	14.00	20.00	180 kg/hr	180 kg/hr	28.80	57.60	0.00	0.00	32.00	108 kg/hr	250.00
	Maximum	m³/hr	196.17	21.85	396.00	150.00	25.00	396.00	540.00	250.00	250.00	106.00	11.00	5.00	30.00	250.00	67.20	161.20	11.20	125.00	20.00	22.00	180 kg/hr	180 kg/hr	51.45	102.90	1.90	1.90	58.29	270 kg/hr	250.00
Line working pressure	Minimum	kPa	-	-	150.00	85.92	140.00	150.00	150.00	800.00	800.00	650.00	500.00	500.00	500.00	700.00	200.00	680.00	140.00	600.00	600.00	600.00	-	-	60.00	60.00	60.00	60.00	-	-	35.00
	Maximum	kPa	-	-	225.00	128.88	210.00	225.00	225.00	1200.00	1200.00	975.00	750.00	750.00	750.00	1050.00	300.00	1020.00	210.00	900.00	900.00	900.00	-	-	90.00	90.00	90.00	90.00	-	-	53.00
Nominal Solids concetration		(w/w) %	3.90	2.50	3.74	3.74	3.74	3.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	100.00	100.00	0.50	0.50	0.50	0.50	0.30	18.00	-

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
PROCESS FLOW DIAGRAM
SHEET 2 OF 2

DESIGN MANAGER: J. PRINSLOO
DATE: 28/02/2020

SCALE: NTS

AMENDMENTS		APPROVED	DATE
TO2	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER: JW14060R-CI-005
CONSULTANT'S NUMBER: H357555-CI-005
FILE No: BWW1403

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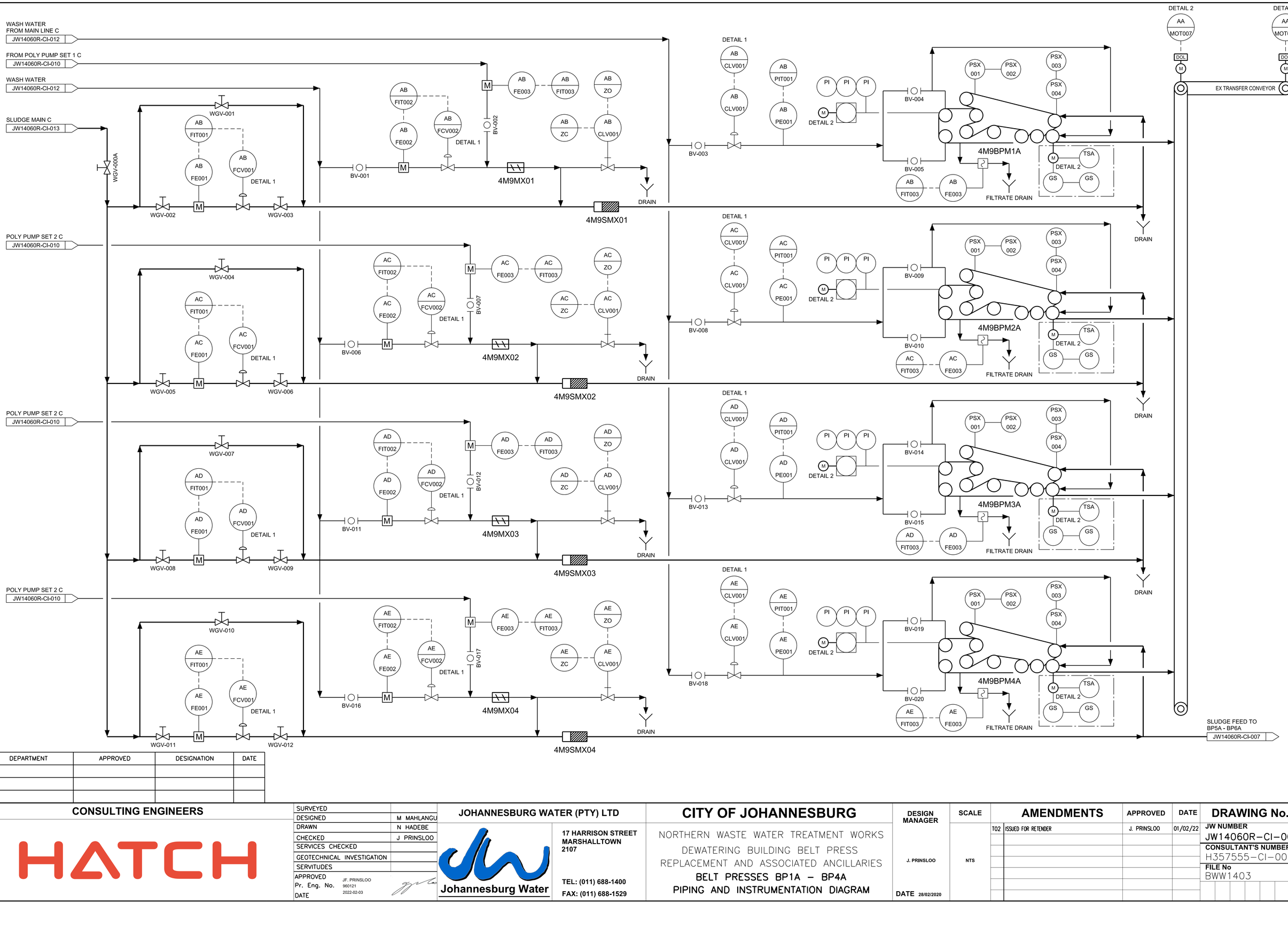

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

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MARSHALLTOWN
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CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
BELT PRESSES BP1A – BP4A
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER
J. PRINSLOO

DATE 28/02/2020

SCALE
NTS

AMENDMENTS

		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER
JW14060R-CI-006

CONSULTANT'S NUMBER
H357555-CI-006

FILE No
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SLUDGE CAKE FROM BP1A
JW14060R-CI-006

SLUDGE CAKE FROM BP2A
JW14060R-CI-006

SLUDGE CAKE FROM BP3A
JW14060R-CI-006

SLUDGE CAKE FROM BP4A
JW14060R-CI-006

WASH WATER
FROM MAIN LINE C
JW14060R-CI-012

POLY PUMP SET 1 C
JW14060R-CI-011

WASH WATER
JW14060R-CI-012

SLUDGE MAIN B
JW14060R-CI-013

POLY PUMP SET 2 B
JW14060R-CI-010

DETAIL 2
AA MOT007
DOL
M

DETAIL 2
AA MOT010
DOL
M

EX TRANSFER CONVEYOR

WGV-013
WGV-014
WGV-015
WGV-016
WGV-017
WGV-018
WGV-019
WGV-020
WGV-021
WGV-000B

AF FIT001
AF FE001
AF FCV001
DETAIL 1

AF FIT002
AF FE002
AF FCV002
DETAIL 1

M
AF FE003
AF FIT003
AF ZC
AF ZO
AI CLV008
BV-022
BV-021
4M9MX05
DRAIN

AF CLV001
AF CLV001
AF PIT001
AF PE001
DETAIL 1
BV-023
PI PI PI
M
DETAIL 2
BV-024
BV-025
PSX 001
PSX 002
PSX 003
PSX 004
4M9BPM5A
M
TSA
DETAIL 2
GS GS
AF FIT003
AF FE003

4M9SMX05
DRAIN

BELT FILTRATE
TO LIQUOR PUMP STATION

AG FIT001
AG FE001
AG FCV001
DETAIL 1

AG FIT002
AG FE002
AG FCV002
DETAIL 1

M
AG FE003
AG FIT003
AF ZC
AG ZO
AG CLV008
BV-027
BV-026
4M9MX06
DRAIN

AG CLV001
AG CLV001
AG PIT001
AG PE001
DETAIL 1
BV-028
PI PI PI
M
DETAIL 2
BV-029
BV-030
PSX 001
PSX 002
PSX 003
PSX 004
4M9BPM6A
M
TSA
DETAIL 2
GS GS
AG FIT003
AG FE003

4M9SMX06
DRAIN

BELT FILTRATE
TO LIQUOR PUMP STATION

AA FIT001
AA FE001
AA FCV001
DETAIL 1

SLAG RETURN LINE
JW14060R-CI-010

DRAINAGE

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

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CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
BELT PRESSES BP5A – BP6A
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER
J PRINSLOO
DATE 28/02/2020

SCALE
NTS

AMENDMENTS

		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.
JW NUMBER
JW14060R-CI-007
CONSULTANT'S NUMBER
H357555-CI-007
FILE No
BWW1403

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01-FEB-2022
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WASH WATER FROM MAIN LINE C
JW14060R-CI-012

POLY PUMP SET 1 C
JW14060R-CI-011

DILUTION WATER
JW14060R-CI-011

SLUDGE MAIN C
JW14060R-CI-013

WGV-000C

WGV-022

AN FIT001
AN FE001
AN FCV001
DETAIL 1

WGV-023
WGV-024

AN FIT002
AN FE002
AN FCV002
DETAIL 1

BV-031
BV-032

AN FE003
AN FIT003
AN ZO
AN ZC
AN CLV001

4M9MX07

DRAIN

4M9SMX07

AN CLV001
AN CLV001
AN PIT001
AN PE001

BV-033

PI PI PI
DETAIL 2

BV-034
BV-035

PSX 001
PSX 002
PSX 003
PSX 004

4M9BPM1C

DETAIL 2
TSA
GS GS

AN FIT003
AN FE003

DETAIL 2
AM MOT007
DOL

DETAIL 2
AM MOT010
DOL

EX TRANSFER CONVEYOR

DRAIN

POLY PUMP SET 2 C
JW14060R-CI-011

WGV-025

AO FIT001
AO FE001
AO FCV001
DETAIL 1

WGV-026
WGV-027

AO FIT002
AO FE002
AO FCV002
DETAIL 1

BV-036
BV-037

AO FE003
AO FIT003
AO ZO
AO ZC
AO CLV001

4M9MX08

DRAIN

4M9SMX08

AO CLV001
AO CLV001
AO PIT001
AO PE001

BV-038

PI PI PI
DETAIL 2

BV-039
BV-040

PSX 001
PSX 002
PSX 003
PSX 004

4M9BPM2C

DETAIL 2
TSA
GS GS

AO FIT003
AO FE003

DRAIN

POLY PUMP SET 2 C
JW14060R-CI-011

WGV-028

AP FIT001
AP FE001
AP FCV001
DETAIL 1

WGV-029
WGV-030

AP FIT002
AP FE002
AP FCV002
DETAIL 1

BV-041
BV-042

AP FE003
AP FIT003
AP ZO
AP ZC
AP CLV001

4M9MX09

DRAIN

4M9SMX09

AP CLV001
AP CLV001
AP PIT001
AP PE001

BV-043

PI PI PI
DETAIL 2

BV-044
BV-045

PSX 001
PSX 002
PSX 003
PSX 004

4M9BPM3C

DETAIL 2
TSA
GS GS

AP FIT003
AP FE003

DRAIN

POLY PUMP SET 2 C
JW14060R-CI-011

WGV-031

AQ FIT001
AQ FE001
AQ FCV001
DETAIL 1

WGV-032
WGV-033

AQ FIT002
AQ FE002
AQ FCV002
DETAIL 1

BV-046
BV-047

AQ FE003
AQ FIT003
AQ ZO
AQ ZC
AQ CLV001

4M9MX010

DRAIN

4M9SMX010

AQ CLV001
AQ CLV001
AQ PIT001
AQ PE001

BV-048

PI PI PI
DETAIL 2

BV-049
BV-050

PSX 001
PSX 002
PSX 003
PSX 004

4M9BPM4C

DETAIL 2
TSA
GS GS

AQ FIT003
AQ FE003

DRAIN

WGV-034

AM FIT001
AM FE001
AM FCV001
DETAIL 1

WGV-035
WGV-036

WGV-000D

SLUDGE RETURN
JW14060R-CI-013

DRAINAGE

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
BELT PRESSES BP1C – BP4C
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER
J. PRINSLOO

DATE 28/02/2020

SCALE
NTS

AMENDMENTS

		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER
JW14060R-CI-008

CONSULTANT'S NUMBER
H357555-CI-008

FILE No
BWW1403

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PRESSURE RELIEF VALVE FLOW
FROM POLY DISCHARGE LINE
JW14060R-CI-010 & 011

WASH WATER PUMPS
LINE A AND B
JW14060R-CI-012

BLOWER
SIZE: TBA
CAPACITY: TBA

MIX001 TO 005
POWER: 4.8 kW
r/min 955

TANK: 4M9TK01
SIZE: Ø3.8 x 3 m
CAPACITY: 35 m³

MANUAL HOPPER
SIZE:
CAPACITY: 400 kg

POLYMER SILO
SIZE:
CAPACITY: 15 tons

TANK: 4M9TK02 TO 05
SIZE: Ø4.6 x 3.2 m
CAPACITY: 49 m³

TRANSFER PUMP
SIZE:
CAPACITY: 28.8 m³/h
HEAD: 6 m

POLY SILO
4M9SC01
AH SIL001
AH MOT00A
DOL M DETAIL 2
4M9JF01
4M9AI01

MANUAL POLY LOADING HOPPER
4M9HP01
AH MOT00B
DOL M DETAIL 2
4M9AI02
4M9JF02

AM SG004 AM XVO
AM SG005 AM XVO
AM SG006 AM XVO
S
AM VLV002 AM HV002
BV-051
AM CLV002 AM ZC AM ZO
AM CLV002 AM ZC AM ZO

AM SG001 AM XVO
AM SG001 AM XVO
S
4M9TK02
AM MOT009 AM LIT005 AM LE005
DOL M DETAIL 2
MIX002
NEW POLY MAKE-UP TANK

PORTABLE WATER CONNECTION
SAFETY SHOWER
DRAIN

4M9TK01
AM MOT009 AM LIT005 AM LE005
DOL M DETAIL 2
MIX001
OLD POLY MAKE-UP TANK

BV-056 P
AM MOT012 DET. 2 DOL M
4M9PU02
PI NRV-030 BV-058 PV-004
AM FSL004 PV-003

BV-057 P
AM MOT013 DET. 2 DOL M
4M9PU03
NRV-031 BV-059
PI AM FSL003

BV-052 P
AM MOT014 DET. 2 DOL M
4M9PU00
PI NRV-032 BV-054 PV-002
PI PV-001 AM FSL001

BV-053 P
AM MOT015 DET. 2 DOL M
4M9PU01
NRV-033 BV-055
AM FSL002

BV-060B
BV-060A
BV-060C

BV-063
AA CLV004 DETAIL 1 AA CV004
BV-064
AA MOT008 DOL M DETAIL 2
AA LIT004 AA LE004
OVERFLOW
4M9TK03
MIX003
EXISTING HOLDING TANK (2013 INSTALLATION)
BV-066A
BV-066B
BV-067
DRAIN

BV-062
AA CLV003 DETAIL 1 AA CV003
BV-065
AA MOT077 DOL M DETAIL 2
AA LIT002 AA LE002
OVERFLOW
4M9TK04
MIX005
EXISTING POLYMER HOLDING TANK (2005 INSTALLATION)
BV-068
DRAIN

BV-062
P AA MOT016 DET. 2 DOL M
4M9PU09
NRV-034 PV-005 PI
P AA MOT017 DET. 2 DOL M
4M9PU08
NRV-035 PV PV-006 PI

AM CLV004 DETAIL 1 AM CV004
AM MOT008 DOL M DETAIL 2
AM LIT004 AM LE004
OVERFLOW
4M9TK05
MIX004
NEW BELT PRESS HOLDING TANK
BV-069
BV-070
BV-071
DRAIN

POLY DOSING TO BP1A-BP6A
JW14060R-CI-010
POLY DOSING TO BP1B-BP4B
LIQUOR PUMP STATION SUMP
LIQUOR PUMP STATION SUMP
LIQUOR PUMP STATION SUMP
NEW BELT PRESS BP1C-BP2C
JW14060R-CI-011
NEW BELT PRESS BP3C-BP4C
JW14060R-CI-011
LIQUOR PUMP STATION SUMP

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	I MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
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2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
PROPOSED POLY MAKE-UP AND HOLDING TANKS
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER: J. PRINSLOO
DATE: 28/02/2020
SCALE: NTS

AMENDMENTS

		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER
JW14060R-CI-009
CONSULTANT'S NUMBER
H357555-CI-009
FILE No
BWW1403

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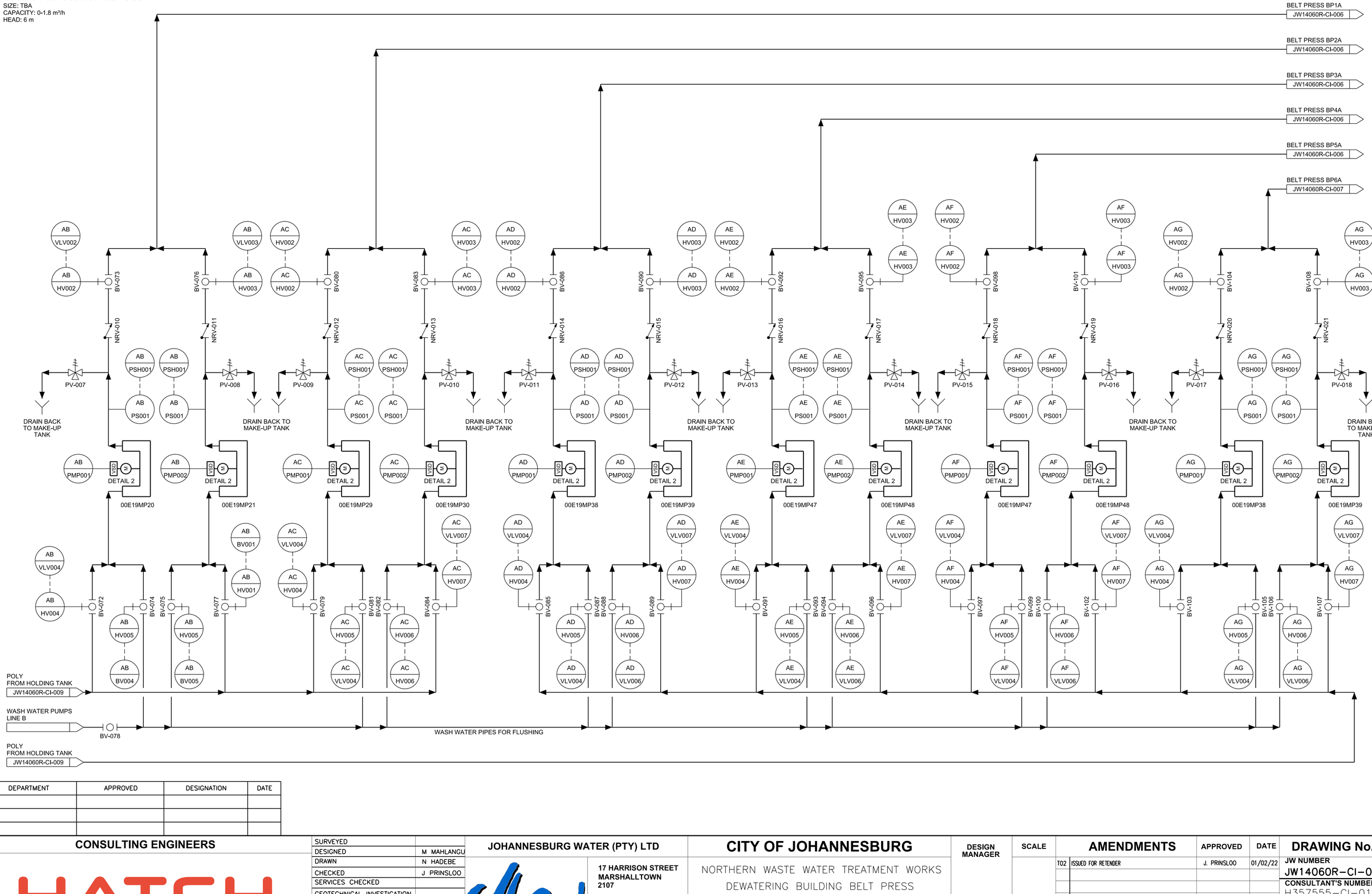
DOSING PUMP: 00E19MP20 TO 39
SIZE: TBA
CAPACITY: 0-1.8 m³/h
HEAD: 6 m



DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
POLY DOSING SUPPLY TO BP1A – BP6A
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER: J. PRINSLOO
DATE: 28/02/2020

SCALE: NTS

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER
JW14060R-CI-010

CONSULTANT'S NUMBER
H357555-CI-010

FILE No
BWW1403

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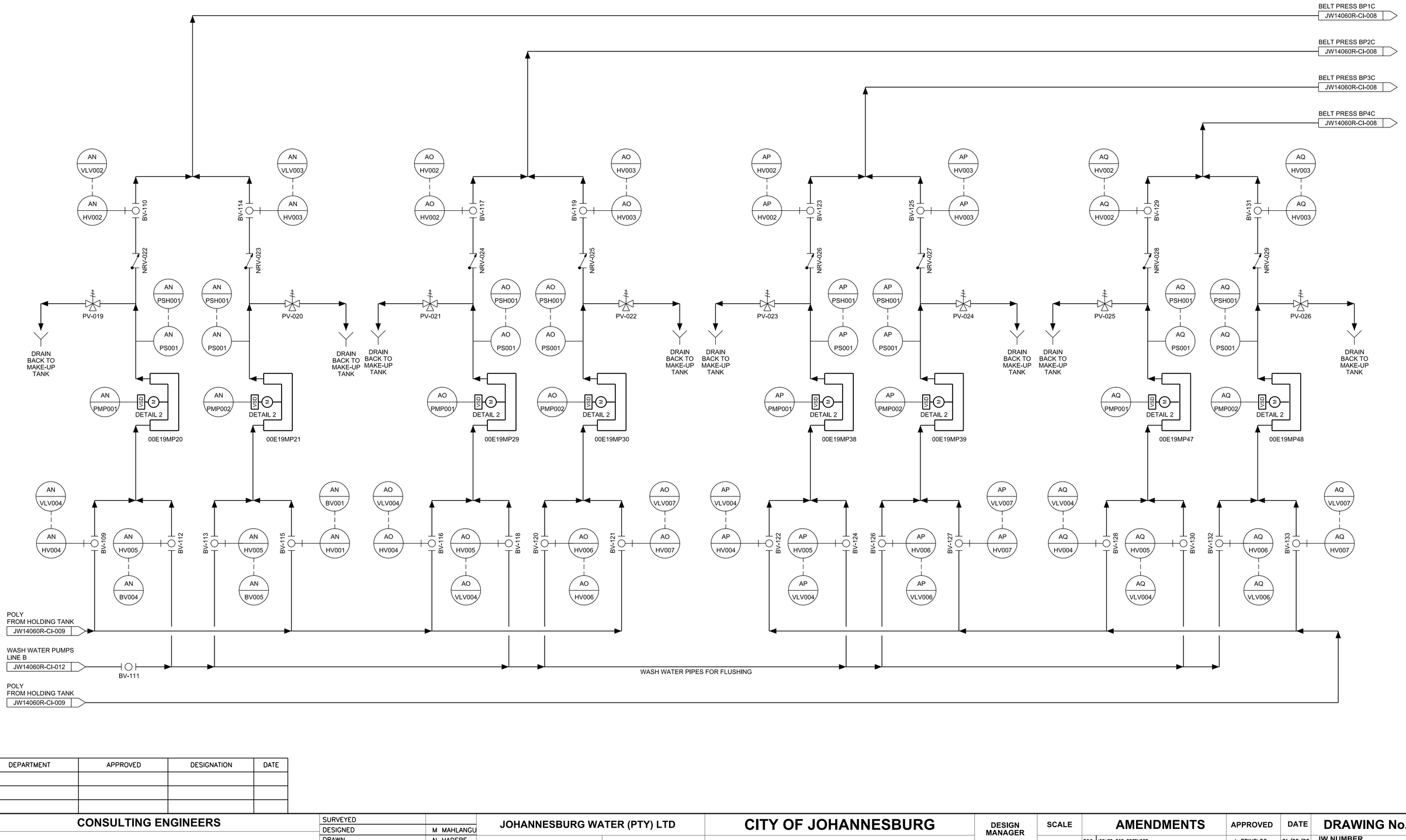
DOSING PUMP: 00E19MP20 TO 48
SIZE:
CAPACITY: 0-1.8 m³/h
HEAD: 6 m



DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
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CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
POLY DOSING SUPPLY TO BP1C – BP4C
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER
J. PRINSLOO
DATE 28/02/2020

SCALE
NTS

AMENDMENTS

		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.
JW NUMBER
JW14060R-CI-011
CONSULTANT'S NUMBER
H357555-CI-011
FILE No
BWW1403

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01-FEB-2022
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ALTERNATIVE WASH WATER SOURCE

UNIT 3 CLARIFIERS OVERFLOW

CHANNEL

AH

AH LIT

BY-PASS PIPELINE

UNIT 3 CONTACT CHAMBER

3C9TK00

AV-002

AV-001

AV-004

RSG-001B

RSG-002

RSG-005

PI

M

3M9PU01

3M9PU02

3M9PU03

NRV-001

NRV-002

NRV-003

RSG-003

RSG-004

RSG-006

WASH WATER TRANSFER PUMPS

AV-003

AH FE

AH FT

AV-005

RSG-001A

RSG-007

EXISTING BY-PASS

PUMP: 3M9PU01/02
MOTOR SIZE: 37 kW
HEAD: 15 m
FLOW RATE: 540 m³/h

PUMP: 4M9PU01 TO 04
MOTOR SIZE: 110 kW
HEAD: 85 m
FLOW RATE: 250 m³/hr

TANK: 3C9TK00
DIAMETER: TBA
VOLUME: TBA
HEIGHT: TBA

SELF-CLEANING STRAINER
SIZE: 250 um
FLOW RATE: 250 m³/h
DESIGN PRESSURE: 900 kPa

TANK: 4C9TK00
DIAMETER / SIZE: TBA
VOLUME: TBA
HEIGHT: TBA

RSG-008

RSG-009

LE001

LE002

AH LIT001

AH LIT002

DAF TANK WEST 4C9TK00

DAF TANK EAST 4C9TK00

RSG-010

RSG-011

WASH WATER RETURN

FCV

RSG-021A

RSG-012

RSG-013

RSG-014

RSG-015

RSG-016

RSG-017

RSG-018

RSG-019

RSG-020

SS

DETAIL 2

4M9PU01

4M9PU02

4M9PU03

4M9PU04

NRV-004

NRV-005

NRV-006

NRV-007

AH FSL

FS001

FS002

FS003

FS004

AH FIT001

AH FE001

FCV

RSG-021B

WASH WATER SUPPLY PUMPS

STR-001

STR-002

RSG-023

RSG-024

RSG-025

RSG-026

RSG-027

RSG-028

RSG-029

RSG-030

RSG-031

RSG-032

RSG-033

RSG-034

RSG-035

RSG-036

RSG-037

RSG-038

RSG-039

AH STN001

AH STN002

01 VU001

02 VU002

ASTR-001

ASTR-002

AH PIT001

AH PIT002

PIT

AH PRV001

AH PRV002

DETAIL 1

AH PIT003

AH PIT004

AH PIT005

AH PRV003

AH PRV004

AH CV001

PE003

PE004

PE005

POLY DOSING BP1A-BP6A
JW14060R-CI-006 & 007

BELT WASH WATER BP1A-BP6A
JW14060R-CI-006 & 007

BELT PRESS BP1B-BP4B

POLY DOSING BP1C-BP4C
JW14060R-CI-008

BELT WASH WATER BP1C-BP4C
JW14060R-CI-008

POLY MAKE-UP TANKS
JW14060R-CI-009

UNIT 4 BELT PRESS BUILDINGS

DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

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CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
MAIN WASH WATER SUPPLY NETWORK
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER J. PRINSLOO

DATE 28/02/2020

SCALE NTS

AMENDMENTS		APPROVED	DATE
TO2	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER JW14060R-CI-012

CONSULTANT'S NUMBER H357555-CI-012

FILE No BWW1403

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01-FEB-2022
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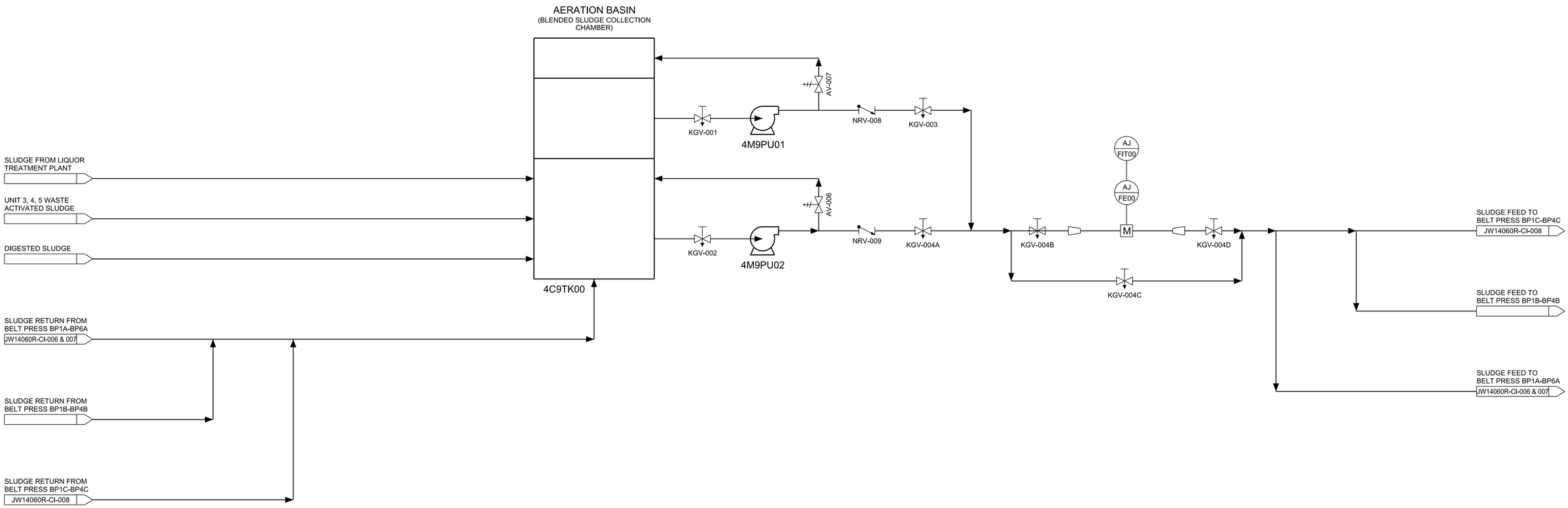
SLUDGE COLLECTION CHAMBER/
AERATION BASIN: 4C9TK00
SIZE: 40.4 x 18.1 m
VOLUME: 4320 m³
HEIGHT: 7 m

PUMP: 4M9PU00
MOTOR SIZE: 45 kW
HEAD: 20 m
FLOW RATE: 396 m³/hr

FLOW METER
SIZE: DN200
FLOW RATE: 450 m³/hr



DEPARTMENT	APPROVED	DESIGNATION	DATE

CONSULTING ENGINEERS

HATCH

SURVEYED	
DESIGNED	M MAHLANGU
DRAWN	N HADEBE
CHECKED	J PRINSLOO
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTE WATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
MAIN SLUDGE SUPPLY
PIPING AND INSTRUMENTATION DIAGRAM

DESIGN MANAGER: J. PRINSLOO

DATE: 28/02/2020

SCALE: NTS

AMENDMENTS		APPROVED	DATE
T02	ISSUED FOR RETENDER	J. PRINSLOO	01/02/22

DRAWING No.

JW NUMBER
JW14060R-CI-013

CONSULTANT'S NUMBER
H357555-CI-013

FILE No
BWW1403

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SCHEDULE OF FINISHES

	FLOORS					SKIRTINGS		EXTERNAL & INTERNAL WALLS		ROOF	
	STEEL FLOAT FINISHED STRUCTURAL CONCRETE SURFACE BED	100mm THICK APRON SLAB ON 250 MICRON GREEN UNDER SLAB PVC MEMBRANE ON EARTH-FILLING TREATED WITH ANT POISON TO SABS 618 COMPACTED IN LAYERS OF 150mm THICK MAX TO 95% MOD AASHTO	170mm CONCRETE TRENCH FLOORS WITH MESH REINFORCING TO ENG DETAILS & SPEC	40 x 3mm THICK SOLID BRASS WEATHER STRIP AT EACH HINGED DOOR	50x50x5 RSA ANGLES TO BE CAST WITH CONCRETE FOR VASTRAP BANDED FLOOR PANELS (HOT DIP GALVANIZED.)	ISOLATION JOINTS BETWEEN CONCRETE FLOOR AND WALL SURFACE FILLED WITH POLYSULPHIDE SEALANT TO ENGINEER'S SPEC	SEALANT TO ENGINEER'S SPEC. 15mm FROM WALL FACE & WITH BOTTOM JOINT SEALED POLYSULPHIDE 1 COURSE FACEBRICK SKIRTING BUILT PROTRUDING	FACEBRICK TO MATCH FINISHES ON EXISTING UNITS STRETCHER BOND WITH BRICKFORCE EVERY 5 COURSES AND WITH 5mm DEEP SQUARE RAKED MORTAR JOINTS	3 COURSE FACEBRICK, ETC. (INCLUDE DPC BONDBREAKER TOP & BOTTOM)	STRUCTURAL CONCRETE	EXISTING STRUCTURAL STEEL
DEWATERING MIAN BUILDING	○			○	○	○					○
MCC BUILDING FOR BELT PRESS SET "A"	○	○	○	○	○	○	○	○	○	○	
MCC BUILDING FOR BELT PRESS SET "C"	○	○	○	○	○	○	○	○	○	○	
BATTERY BUILDING	○	○	○	○	○	○	○	○	○	○	

MISCELLANEOUS EQUIPMENT SCHEDULE

PROPOSED LOUVRES LV1 MARKED ON PLAN ARE SUPPLIED AND FITTED BY HVAC SUBCONTRACTOR.
CIVIL CONTRACTOR TO PROVIDE OPENINGS IN SHEETING POSITIONS TO BE DETERMIND ON SITE.

LV1

FE 9.0 Kg DRY CHEMICAL POWDER FIRE SABS CERTIFIED

HR 30 M FIRE HOSE REEL SABS CERTIFIED

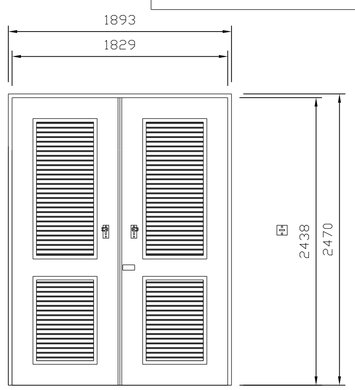
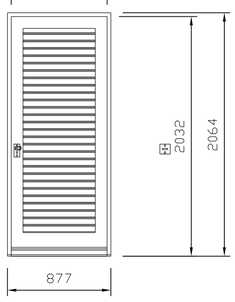
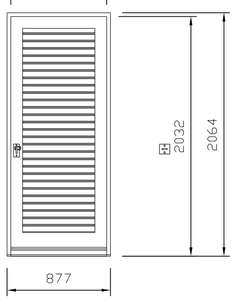
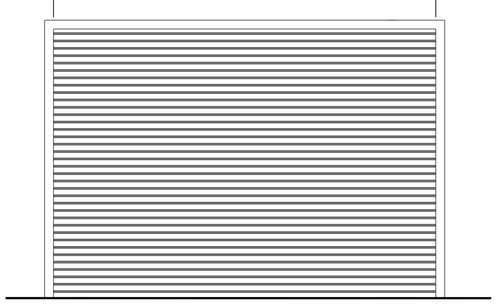
REFERENCE DRAWINGS

JW14060R-STD-002 : TYPICAL EQUIPMENT ACCESS STEELS STAIRS, HANDRAILS AND GRATING DETAILS.

JW14060R-ME-001 : DEWATERING BLD NORTH-WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R-ME-002 : DEWATERING BLD NORTH-EAST FLOOR PLAN (SHEET 2 OF 2)

JW14060R-CE-001 : MCC BUILDING FOR BELT PRESS SET "A" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-002 : MCC BUILDING FOR BELT PRESS SET "A" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R-CE-003 : MCC BUILDING FOR BELT PRESS SET "C" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R-CE-004 : MCC BUILDING FOR BELT PRESS SET "C" SECTIONS AND DETAILS. (SHEET 2 OF 2)

DOOR SCHEDULE

	TYPE D1 / QUANTITY 2 / LOCATION: MCC BUILDING FOR BELT PRESS SET "A", MCC BUILDING FOR BELT PRESS SET "C"	TYPE D2 / QUANTITY 2 / LOCATION: MCC BUILDING FOR BELT PRESS SET "A", MCC BUILDING FOR BELT PRESS SET "C"	TYPE D4 / QUANTITY 1 / LOCATION: BATTERY BUILDING	TYPE D3 / QUANTITY 5 / LOCATION: DEWATERING BUILDING
				
DOOR	STANDARD 1.2mm ALLUMINIUM TRANSFORMER DOOR & JAMB COMBINATION TYPE DV AS PER DURO CAT. WITH FULL LOUVRES AS SHOWN SUPPLIED COMPLETE (2mm ALLUMINIUM RIVERTED TO INSIDE FACE OF LOUVRES.)	STD ALUMINIUM .2032 x 813mm MERANTI F/L. BATTEN DOOR WITH OPEN BACK	STD ALUMINIUM .2032 x 813mm MERANTI F/L. BATTEN DOOR WITH OPEN BACK DOOR TO BE FITTED WITH PANIC BARS ON INSIDE AND AUTOMATED KEY PAD ENTRANCE	HOT DIP GALVANISED STEEL SLIDING DOOR (INDUSTRIAL TYPE) FOR MAIN ACCESS TO THE BUILDING AND TO THE BELT PRESS AREA. 4000mm WIDE x 4900 mm HIGH OPENING. TO MATCH THE EXISTING DOORS SPECIFICATION.
FRAME	SUPPLIED WITH DOOR	SUPPLIED WITH DOOR	SUPPLIED WITH DOOR	SUPPLIED WITH DOOR
FINISH/ GLAZING	(APPLY 1 PRIMER & 1 U/COAT WITH 2 CTS. GLOSS ENAMEL FINISH) "ULTRAMARINE BLUE."	(APPLY 1 PRIMER & 1 U/COAT WITH 2 CTS. GLOSS ENAMEL FINISH) "ULTRAMARINE BLUE."	(APPLY 1 PRIMER & 1 U/COAT WITH 2 CTS. GLOSS ENAMEL FINISH) "ULTRAMARINE BLUE."	HOT DIP GALVANISED .

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.WESSON
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	J. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

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CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
DEWATERING,MCC "A" & "C" AND BATTERY BUILDINGS
DOORS SCHEDULE AND DETAILS

DESIGN MANAGER
J. PRINSLOO
DATE 20/02/2020

SCALE
AS SHOWN

AMENDMENTS

		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-STD-001
CONSULTANT'S NUMBER
H357555-STD-001
FILE No
BWW1403

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02-FEB-2022 14:49
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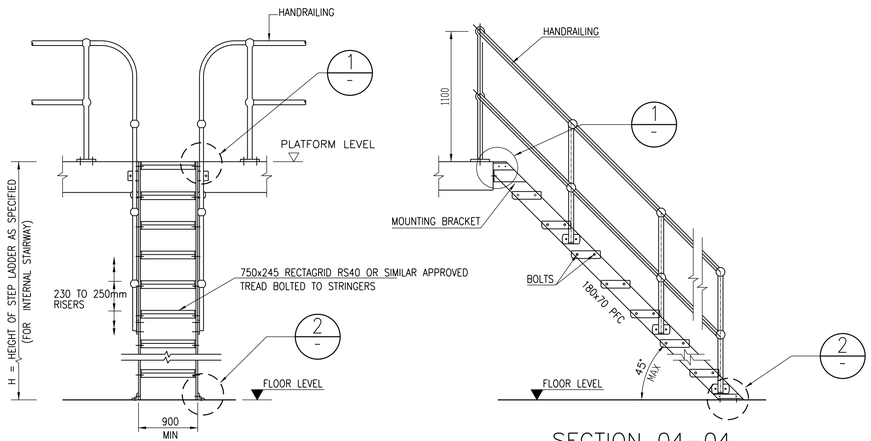
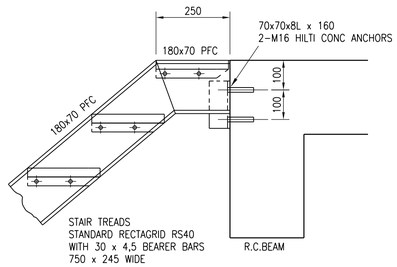


FRONT ELEVATION

SECTION 04–04

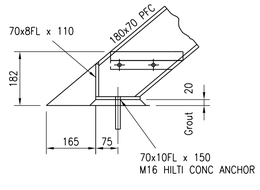
ACCESS STEEL STAIRWAY

SCALE 1:25



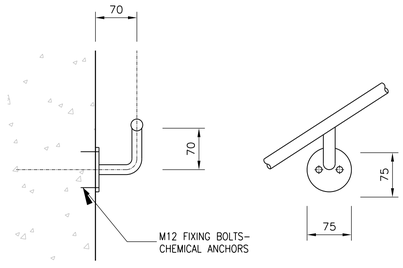
DETAIL 1

SCALE 1:10



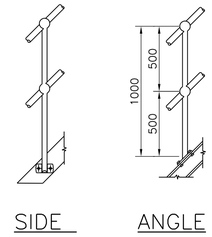
DETAIL 2

SCALE 1:10



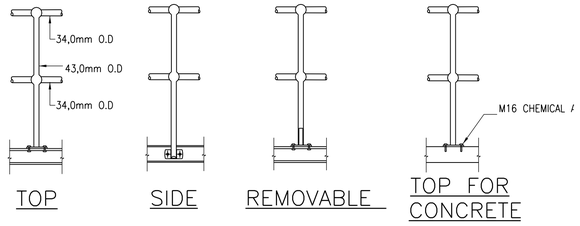
ALTERNATIVE HANDRAIL MOUNTING DETAILS

SCALE 1:5



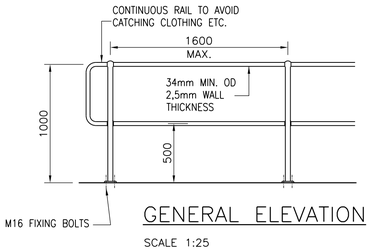
STAIRWAY MOUNTED STANCHION TYPES

SCALE 1:25



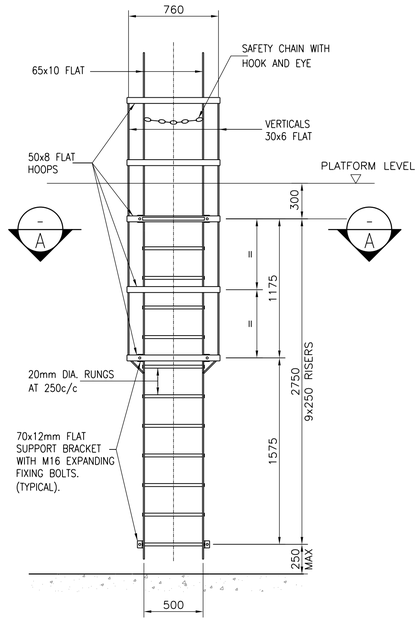
STAIRWAY MOUNTED STANCHION TYPES

SCALE 1:25



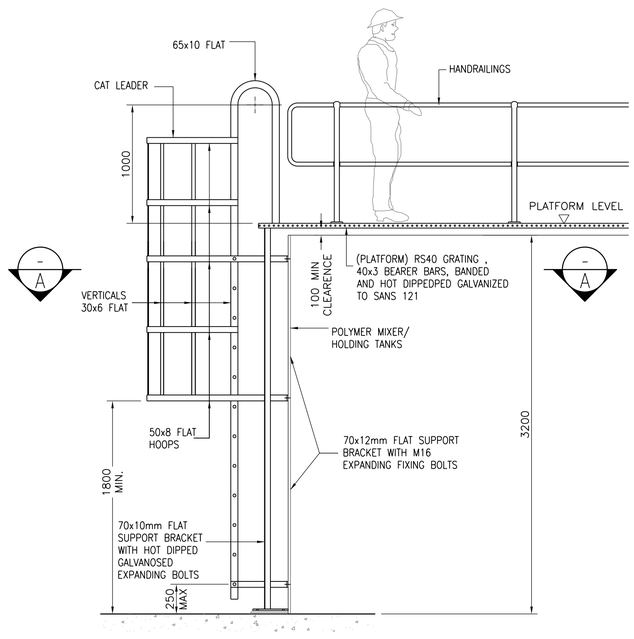
GENERAL ELEVATION

SCALE 1:25



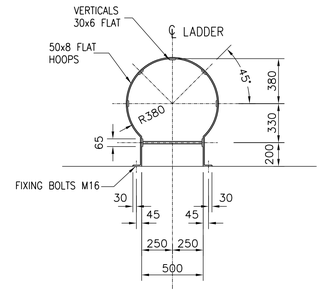
FRONT ELEVATION

SCALE 1:25



SIDE ELEVATION

SCALE 1:25



SECTION A–A

SCALE 1:25

NOTES

1. MATERIAL OF FABRICATION AS SPECIFIED
2. LADDER OF ALL WELDED CONSTRUCTION
3. SUPPORT BRACKETS AT 2.0m c/c MAX.
4. CORROSION PROTECTION AS SPECIFIED
5. UNLESS OTHERWISE SHOWN, ALL STEELWORK SHALL BE HOT DIPPEDPED GALVANISED AND ALL FIXINGS SHALL BE HOT DIPPEDPED GALVANISED GRADE 304.
6. ALL CHEMICAL ANCHORS SHALL BE 316 STAINLESS STEEL COMPLETE WITH ISOLATING KITS WHERE FIXING HDG STEEL TO CONCRETE.

REFERENCE DRAWINGS

JW14060R–ME–001 : DEWATERING BLD NORTH–WEST FLOOR PLAN (SHEET 1 OF 2)
JW14060R–ME–002 : DEWATERING BLD NORTH–EAST FLOOR PLAN (SHEET 2 OF 2)
JW14060R–ME–003 : SLUDGE VALVE BANK FOR BP1A–BP6A – SECTIONS & DETAILS
JW14060R–ME–004 : SLUDGE VALVE BANK FOR BP1C–BP4C – SECTIONS & DETAILS
JW14060R–ME–005 : NEW POLYMER HOLDING TANK FOR BP1C–BP4C – SECTIONS & DETAILS
JW14060R–ME–006 : BELT PRESS FOR BP1A–BP6A – SECTIONS & DETAILS
JW14060R–ME–007 : BELT PRESS FOR BP1C–BP4C – SECTIONS & DETAILS
JW14060R–ME–008 : WASH WATER STRAINER FOR BP1A–BP6A – SECTIONS & PIPE SCHEDULE
JW14060R–ME–009 : WASH WATER SUPPLY PUMPS – SECTIONS & DETAILS
JW14060R–ME–010 : SLUDGE SUPPLY PUMPS SECTIONS AND DETAILS

JW14060R–CE–001 : MCC BUILDING FOR BELT PRESS SET "A" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R–CE–002 : MCC BUILDING FOR BELT PRESS SET "A" SECTIONS AND DETAILS. (SHEET 2 OF 2)
JW14060R–CE–003 : MCC BUILDING FOR BELT PRESS SET "C" FOUNDATION,SURFACE BED LAYOUT AND DETAILS. (SHEET 1 OF 2)
JW14060R–CE–004 : MCC BUILDING FOR BELT PRESS SET "C" SECTIONS AND DETAILS. (SHEET 2 OF 2)

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	M.MAHLANGU
DRAWN	G.NGOMA
CHECKED	S.WESSON
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	J. PRINSLOO
Pr. Eng. No.	960121
DATE	2022-02-03

JOHANNESBURG WATER (PTY) LTD

Johannesburg Water

17 HARRISON STREET
MARSHALLTOWN
2107

TEL: (011) 688-1400
FAX: (011) 688-1529

CITY OF JOHANNESBURG

NORTHERN WASTEWATER TREATMENT WORKS
DEWATERING BUILDING BELT PRESS
REPLACEMENT AND ASSOCIATED ANCILLARIES
TYPICAL EQUIPMENTS, ACCESS STEEL STAIRS,– HANDRAILS, GRATING – SECTIONS AND DETAILS

DESIGN MANAGER: J. PRINSLOO

DATE: 20/02/2020

SCALE: AS SHOWN

AMENDMENTS

		APPROVED	DATE
T00	ISSUED FOR TENDER	J. PRINSLOO	30/04/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R–STD–002

CONSULTANT'S NUMBER
H357555–STD–002

FILE No
BWW1403

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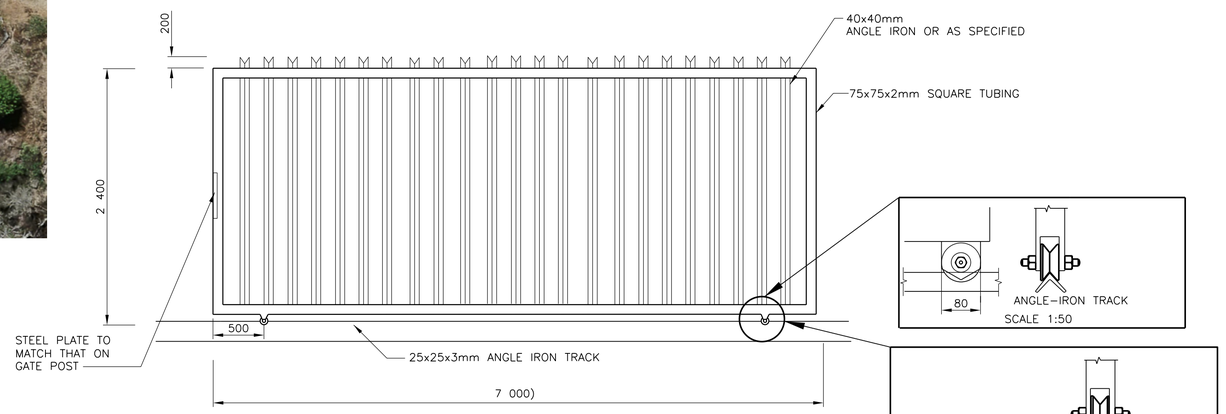
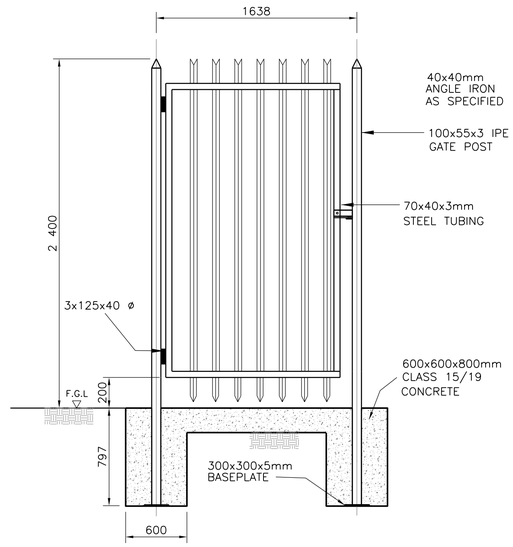
GENERAL NOTES:

1. A FULL SET OF DRAWINGS SHALL BE KEPT ON SITE.
2. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
3. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
4. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
5. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT CIVIL, STRUCTURAL OR OTHER DRAWINGS.
6. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEERING SERVICES MANAGER(ESM) FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
7. UNDERGROUND SERVICES ON SITE TO BE IDENTIFIED & EXPOSED WHERE RELEVANT.
8. CONSTRUCTION TO BE IN ACCORDANCE WITH THE PROJECT SPECIFICATION AND RELEVANT SABS 1200 SPECIFICATION.
9. STRUCTURAL DRAWINGS TO BE READ IN CONJUNCTION WITH SERVICES DRAWINGS AND ANY DISCREPANCIES MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE EMPLOYER'S AGENT OR REPRESENTATIVE .
10. ALL DIMENSIONS ARE IN MM.

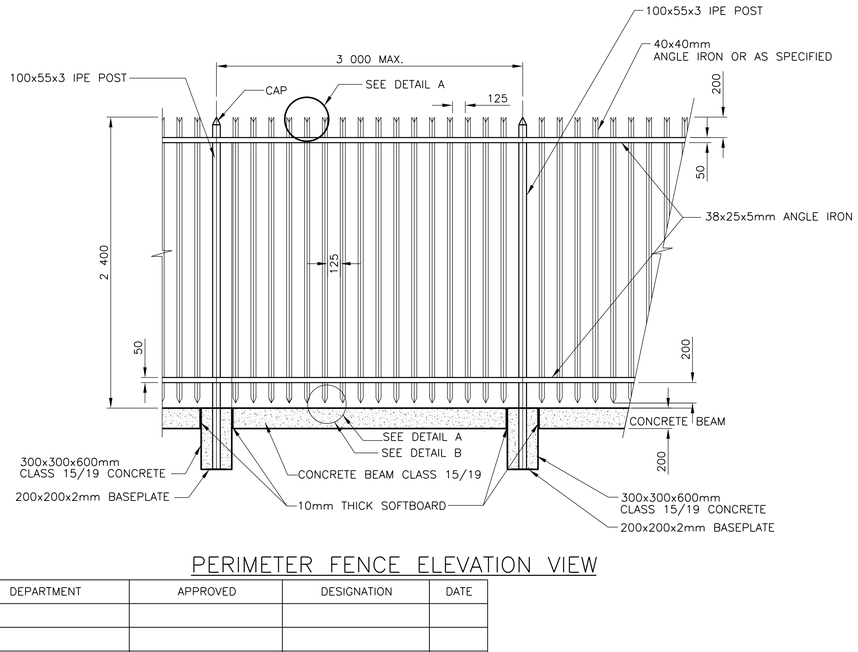
KEY PLAN 1:1000
FENCING BOUNDARY WITH A PERIMETER OF ±350m
(TO BE SURVEYED DURING CONSTRUCTION)



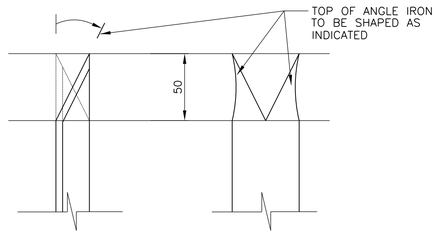
SLIDING GATE DETAILS (G1, G2, G3)
SCALE 1:30



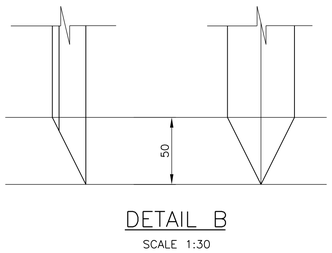
SWING GATE (P1)
SCALE 1:25



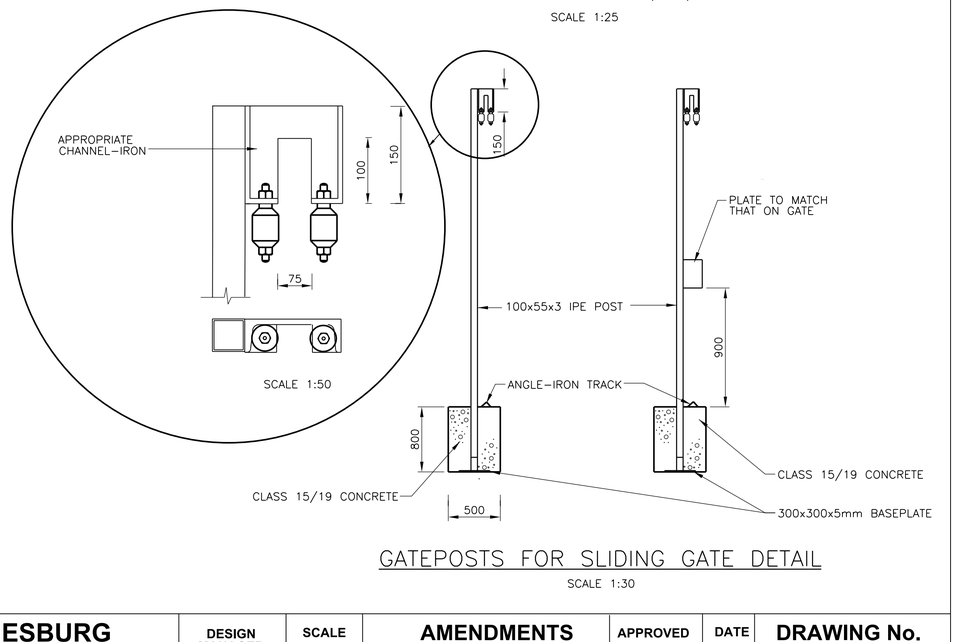
PERIMETER FENCE ELEVATION VIEW



DETAIL A
SCALE 1:30



DETAIL B
SCALE 1:30



GATEPOSTS FOR SLIDING GATE DETAIL
SCALE 1:30

DEPARTMENT	APPROVED	DESIGNATION	DATE
.			

CONSULTING ENGINEERS

HATCH

SURVEYED	.
DESIGNED	
DRAWN	M. MAHLANGU
CHECKED	S. MANGANYI
SERVICES CHECKED	
GEOTECHNICAL INVESTIGATION	
SERVITUDES	
APPROVED	JF. PRINSLOO
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DEWATERING BUILDING BELT PRESSES
REPLACEMENT AND ASSOCIATED EQUIPMENT

TYPICAL FENCING AND ACCESS GATE DETAILS

DESIGN MANAGER
J. PRINSLOO

DATE 20/02/2020

SCALE
AS SHOWN

AMENDMENTS

		APPROVED	DATE
T00	INTERNAL REVIEW	J. PRINSLOO	12/06/2020
T01	ISSUED FOR TENDER	J. PRINSLOO	18/06/2020
T02	ISSUED FOR RETENDER	J. PRINSLOO	02/02/2022

DRAWING No.

JW NUMBER
JW14060R-STD-003

CONSULTANT'S NUMBER
H357551-STD-003

FILE No
BWW1403

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